

Manufacturers Record

Exponent of America



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JANUARY 20, 1921

A PREDICTION FULFILLED

In view of the disastrous results of deflation, we reprint an editorial from our issue of January 29, 1920, since every statement then made has now been literally fulfilled. It is well once in a while to repeat such predictions to show how simple it was to forecast disastrous destruction of prosperity when once it was known, as we then knew, that the financial forces of the nation and the Administration had determined to break down prices.

[From MANUFACTURERS RECORD, January 29, 1920.]

DEFLATION WOULD SPELL DISASTER.

Farmers and laboring people are getting a fairer pay today than ever before in the history of the country. There is more widespread prosperity than this or any other country has ever enjoyed. Manufacturers and their employes are more prosperous, merchants are making more money, farmers and mechanics everywhere are enjoying a hitherto unknown prosperity which is lifting them from the slough of despond in which they have existed for generations.

It is true that high prices and high wages are working a hardship on some classes, but they are very limited in number as compared with those who are being benefited by high wages, and sooner or later there will come an adjustment in their pay which will give to teachers and preachers and clerks salaries commensurate with the cost of living.

It is true that labor is not producing as fully as it should do, but this is only the natural outcome of the changes which have come about by reason of the war and of high prices. The labor unrest is less pronounced than it was some months ago. The coal miners have returned to work, even though the Government made an unwise decision in their case, and they are producing coal freely. All of these changes take time to work out. It would have been folly to expect anything else than what we now see in the labor world following the turmoil of the war. Notwithstanding this almost universal prosperity and the fact that people are living better and more comfortably than ever before, there is a widespread disposition among the financial influences of the country, led by the Federal Reserve Bank, to bring about deflation in order to lessen this activity and to break down prices and wages. There can be no deflation of wages or of prices without bringing on a panicky condition, which would endanger the safety of the country by feeding the fires of bolshevism.

The situation is entirely unlike anything in the past. It is entirely possible for the Federal Reserve Board to duplicate the panic of 1873, and by somewhat similar methods, but a panic brought on at the present time through deflation would be a very different panic from that which caused such disaster in '73. It seems incomprehensible that financiers cannot understand that, as the war was fought on high wages and inflation, any attempt to lessen the inflation which exists in this country for some years to come would prove disastrous to the nation and to every interest in it. Deflation would spell disaster, and the Federal Reserve Board and all other banking interests which have thought of deflation as the road to betterment of the nation's condition may rest assured that it would be a straight highway down to ruin.

No one can for a moment question the facts that some wages are entirely too high, that some laborers are inefficient and not producing in proportion to pay, any more than they would question the fact that many lines of manufactured goods are entirely too high and are yielding an unfair profit to the producers. The laborers are not more to blame than any manufacturers whose profits are too big and than many merchants who are gouging the public because the public has been willing to pay the price. There are, however, natural economic laws which in due time regulate these things. If prices are too high, people will after a while quit buying, whether it be pins and needles or cotton goods or lumber or anything else. This would bring about a natural readjustment, which would gradually bring things to a more normal condition instead of forcing this readjustment by unwise and premature bank action.

The first thing all bankers and all others should do is to bring about a refunding of all Government bonds for a long term of years at a fair rate of interest, in order to save 20,000,000 investors from losing on their bonds and, worse than that, from losing faith in the integrity of their Government. The next thing is to bring about a change in our income-tax laws which does not encourage profiteering and stimulate high prices. In the meantime, the bankers should help the country to keep its business prosperity, that all the people may find an abundance of work at profitable wages.



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Exponent of America

JANUARY 20, 1921

Volume LXXIX

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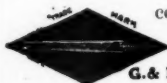
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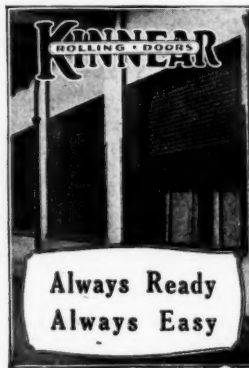
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THE INCREASED PRODUCTION OF BANKRUPTCIES AS THE OUTCOME OF THE FEDERAL RESERVE BOARD'S WORK.

LAST summer Comptroller of the Currency Hon. John Skelton Williams, in referring to the deflation of credit by the Federal Reserve Board, spoke of it as bringing about a decrease in production of nonessential things and an increase in the production of essential things. At that time the MANUFACTURERS RECORD asked Mr. Williams if he would point out any line of industry except that of bankruptcy in which there had been any increased production by reason of deflated credit.

It is interesting in connection with this query, which was never answered, to quote a market letter from the Matthew Addy Company of Cincinnati, which, under date of January 8, said:

"Rather than pile up pig-iron with no one willing to take it, the furnaces have ceased operations, and the melters of iron are doing the same thing. They are not turning out finished materials faster than their own customers will take them. In consequence **production is at a minimum.** This is an immense hardship, yet it is the only safe way. It will be financial suicide to keep on producing whether there was no possibility of turning the goods produced into money."

As the production of pig-iron is reaching the minimum, as one furnace after another blows out, so many other industries have been pressed down, beaten down, indeed, by the club of the Federal Reserve Board to the minimum of production, though last summer the country was assured that the work of the Federal Reserve Board would be to increase the production of essential things. Instead of doing this the deflation campaign produced exactly what the MANUFACTURERS RECORD said it would do in decreasing production of every essential thing and increasing at an amazing rate poverty and unemployment and bankruptcy.

SUGGESTIONS THAT WE SHOULD REGULATE OUR TARIFF TO AVOID RETALIATION BY OTHER NATIONS AN INSULT TO AMERICA.

PERSISTENT reports are being circulated from Washington that if this Government dares to pass a tariff bill for the protection of its own people there would be retaliation on the part of foreign countries, and this is given as an argument why the emergency tariff bill should not be passed.

This Government has not usually permitted itself to be bulldozed by other nations except in the sad illustration when by reason of the threat of Japan we were bulldozed through President Wilson's request that we eliminate from the Panama Canal bill the free tolls on American ships. It is generally understood that Japan had threatened war by reason of California's legislation and that England promised to persuade Japan not to go to war against the United States if we would eliminate the free tolls on American ships. We believe that is probably the most unfortunate case in our history when America permitted the bluff of another nation to cause us to cowardly back down from our own rights. It is hardly conceivable that the people of this country will again permit themselves to be bulldozed in the same way as to the matter of tariff or anything else.

If it is the belief of this country that we should pass an emergency tariff bill, to protect farmers and other interests and labor, it is hardly conceivable that Congress or the people at large would permit any foreign country or countries to bulldoze us into acting differently. In the first place, America is not accustomed to being dictated to and bulldozed by any nation. It made one sad blunder in the Panama Canal situation, but it is not likely to make others. In the second place, no nation is dealing with us except on the basis of profit to itself. No man in Europe or the Orient is buying anything from us for love or friendship or for any other reason than that of profit to himself. Foreigners are buying from us only the things which they cannot secure to better advantage from other people. They are selling to us things on which they are making a profit. Selfishly they will continue to buy or sell only as to whether they can make a profit on dealing with us or not.

It is therefore the height of absurdity or cowardice for America to be influenced in our advocacy of tariff or in any other legislation merely because of the fear that any other nation may refuse to trade with us or may pass laws of retaliation. So long as we are doing the fair and honest thing, protecting our own interests and safeguarding our own people in dealing with the world, we need have no fear of retaliation, threatened or imagined, by any other nation. We are abundantly able to stand alone, to assert our rights and to maintain our rights, on the old basis of millions for defense of American interests, be they agricultural or industrial, but not one cent for tribute to be paid by failure to pass legisla-

tion merely to insure the favor of the traders of other countries.

This country is being flooded with the pauper-raised products of the Orient, flooded with the goods from Germany and other countries made at rates of wages under which American civilization could not exist. It behooves us to save ourselves and in doing so to benefit the world. One of the great missions of this country in world affairs should be to maintain so high a rate of wages as to force all other countries in the world to a gradual advance to our standard of wages. If other countries continue their present low rate of wages then it is our duty to shut out their products completely and safeguard our own people.

The whole world is cursed by the vogue of cheap labor. Poverty and diseases of poverty, indescribable and incomprehensible to Americans, exist throughout all Asia, India, China and elsewhere, because of the starvation wages of 3 and 5 and 10 cents a day, and yet there are men in this country daring to suggest that we should continue to permit the goods made under such labor wages to flood our markets and break down the rate of wages in this country! If we want to sink to the level of Japan and China and India and Germany and other countries in the rate of wages we need only open our gates to their products, but before we reached that stage of degradation there would be a revolution in this country which would sweep out of power any man who advocated such a policy.

Our great duty, possibly our supreme duty, to the world is to maintain a rate of wages that gives to the laborer the opportunity of decent living and of education for his family and in doing this forces other countries gradually to advance their rate of wages to our standard or else keep their products absolutely out of our markets and save this, the best market on earth, for our own people.

We have one-half of the world's output of coal and iron and steel and more than half of the world's output of cotton and petroleum and many other products, with nearly one-half of the world's railroad mileage. We have the best and the richest market on earth, which every other nation in the world is struggling to capture. This is our country, this is our market; we are paying American wages and developing a civilization so entirely different from that of any other country that with 6 per cent of the world's population we have accumulated in a brief space of time, as the life or nations goes, one-third of the world's accumulated wealth. That protective tariff system which made this possible and that form of democracy or republic, so entirely different from what the world elsewhere knows, which created the conditions that made this development possible, are the things for which we should stand unto the end of time. Through the development of American citizenship, through high rates of wages, through advancement in education, through lifting up the down-trodden and seeing that every man who works gets a decent price for his labor, America can do its greatest work for the advancement of the world.

CHARITY BEGINS AT HOME.

IF certain newspapers worried half so much over the welfare of American agriculture as they do about the welfare of producers in other lands, there would be fewer silly arguments about the necessity of opening American markets to the world. The Baltimore Sun weeps tears at the thought that Canada may erect a tariff wall against us if we dare to erect a tariff wall of our own. Canada already has a preferential tariff system devised to encourage the sale of British goods within the Dominion. Maybe that is why a Democratic President, Woodrow Wilson, recommended that we ought to have a permissive system of retaliatory tariffs.

GIVE THE FARMER A CHANCE.

IT is indeed gratifying to know that a magazine of the standing and influence of the MANUFACTURERS RECORD is so ably and consistently defending the agricultural interests of the South—in fact, of the entire country—and I want to compliment you on the stand you have taken on this important question.

"The agricultural interests of this country are indeed in a bad and deplorable plight. Just as the farmers were beginning to get cleverly on their feet and were beginning to make farming worth while, along came a dreadful and sudden drop in prices. It is indeed discouraging. Could we have had a few years of prosperity it would no doubt have turned the tide from the cities back to the farm. This movement will now receive a serious setback."

Col. I. T. Pryor, president of the American National Livestock Association, writes to the MANUFACTURERS RECORD in the above vein. He calls attention to one of the results of the application of the theory of "deflation" of our financial controllers that is vastly worthy of thought—the checking of the back-to-the-farm movement. This ebb and flow of rural population has ceased to be merely a question for academic discussion. We have long maintained that this tendency away from the farm was due to the fact that uncertainty of financial return was a corollary of agriculture. One hears it is true, of gigantic profits of the farmer, emanating, as a rule, from the man whose ideas are based upon half-heard and wholly misunderstood stories of crop return on investment of labor, time and money, but the most casual study of the question of farm economics brings a realization of the gravity of the situation.

When, as at times is the case, it is manifest that the farmer is receiving adequate or more nearly adequate returns, there is equally manifest a greater satisfaction with rural conditions.

With money to spend over and above what is actually required for seed, fertilizer, machinery, taxes, etc., the farmer installs electric equipment, better the standard of his stock, improves his home and elevates the whole standard of his living. He will listen more readily to talk of increased taxation, a question which is almost axiomatically involved in every plan for road improvement, better schools, etc. Briefly, he is in the class that can and will spend.

With his return limited to his bare needs he just so surely ceases to develop, becomes weary of the unremunerative and unequal fight with nature and turns a willing ear to the siren plea of the city. No man continues in a business, nor does he raise a son to continue therein, if that business fails to repay him for labor and time expended. A man unsuccessful in a given line of endeavor never urges his son to follow in his footsteps.

Farming is of the world's vocations unique. It is the one fundamentally essential occupation. Strip the world of machinery, art and science and a new civilization lies in embryo only awaiting the scratching of the earth with a rude stick and the planting of the grain to burgeon forth. A hungry world is a world of unrest, and a starving world is unthinkable.

We of America, as shown by our last census, have become more than half a town dwelling people. This transition from the natural state of mankind must gain in impetus if agriculture is unprofitable or barely self-sustaining.

Self-interest alone, therefore, cries aloud for improved conditions for the farmer, even by those who do not want to live an agrarian life or think that they have no interest in it, for the subsistence of the peoples of the earth depends upon the cultivation of the soil.

The MANUFACTURERS RECORD believes that the only way to avert a serious food shortage in this country is to assure to the farmer of America a fair return for capital and labor invested.

Should Not the Reserve Board and the Interstate Commerce Commission Be Required to Hold Meetings in Public? Questions Which the Nation Has the Right to Ask Secretary Houston and the Federal Reserve Board.

WHEN you began the campaign of restricting credit and of insisting that prices were too high and must come down, did you not have in mind a definite determination to break the prices of farm products in order to fulfill President Wilson's promises to the Railroad Brotherhoods in August, 1919, that the full power of the Government would be used to break down high prices?

Did you not then know that there was no way on earth to break down prices except through breaking down farm products as the first step?

Did you not know that in breaking down the prices of wheat and corn and livestock and cotton you would bring bankruptcy to hundreds of thousands of farmers?

Did you not know that this would create havoc and chaos in business, or had you so little knowledge of financial and business history as to be inconceivably ignorant on this point?

Were you not willing to see the prices of all farm products broken to the extreme on the theory that by doing this you would bring about a deflation or breakdown of all prices?

Did you not know that this would mean a depression such as this country had not seen for many years, or were you so shortsighted, narrow-visioned and incompetent, or of malicious intent, as not to understand the inevitable outcome of your work?

When you undertook to force all the banks in the country to call loans on Government bonds, did you not do this as the first step toward bringing about a breakdown of prices, though it dishonored every promise which the Federal Reserve Board, the Treasury Department and the banks of the country had made when begging people to buy bonds to the limit of their credit, the promise having been given that the banks would carry these bonds until they could be paid for out of savings?

When you undertook to rape the nation's honor and the promises of the banks, did you or did you not know that you were shaking the confidence of the people of the country in the honor of the Government and in the honesty, integrity and faith of the banks?

Did you not know that you were doing more to break down the growing sense of thrift and savings than had ever been done before in this country?

Did you not know that in violating the sacred honor of the Government and the banks in their promises to the bond buyers you were sowing the seeds of bolshevism and socialism which would ripen into a harvest of evil?

When you boasted that the work of the Federal Reserve Board would lessen the production of nonessentials and increase the production of essential things, were you really honest in that statement or were you so hopelessly ignorant

of the effect of your work as to have put that out in good faith?

Are you able to show a single industry in which there has been increased production by reason of the work of the Federal Reserve Board in deflating credits?

Can you show any increased production of any kind by reason of your work except an enormous increase in the production of poverty and bankruptcy and suicides by reason of the overwhelming disasters which your policy brought upon the country?

As you look upon the destruction of business prosperity, upon the loss by the farmers of over \$8,000,000,000 through a wholly unnecessary reduction in the price of their products; as you look upon the poverty of the cattle growers of the West and the grain producers of the same region and the cotton raisers of the South; as you see losses to these people and to the business interests of the country which will aggregate a greater sum than the total cost of the war to this country, can you take any pride in your work, or do you hang your heads in shame, as honest men should do, and mourn the incomprehensible blunders which you have made?

Is it true that there has been a minority opposition in the Board to the credit-deflation work of Governor Harding and Secretary Houston?

If this be true, did not those in the Board who opposed the work of the majority lose the opportunity of a lifetime to come out in the open and state their opposition to the policy of the majority and in an open fight for the nation's business salvation resign from the Board if necessary to emphasize their views?

If there were any minority members who had knowledge superior to that displayed by the majority, did they not prove themselves recreant to their supreme responsibility to the country when they failed, if need be, to sacrifice their personal interests by resigning from the Board and telling the country why?

In the light of this situation, has it not become supremely necessary that every meeting of the Federal Reserve Board should be reported in detail and the information given to the public from day to day in exactly the same way that the proceedings of Congress are reported through the Congressional Record?

Is it fair to the nation that seven men holding the greatest power over the business life of this country ever given any seven men in the world's history should in secret discuss their plans and never permit the nation to know what they are doing and what they propose to do until after they have carried out their schemes, which, in the case of credit restriction, for instance, has proven what might rightly be classed as one of the greatest blunders or worse in human history, whether done intentionally or through ignorance?

Indeed, in the light of the secrecy with which the Reserve Board has carried on its work and in the light of the statement of Governor Harding that the public would never have known anything about the credit-restricting circulars of the Federal Reserve Bank of Richmond warning member banks month after month to restrict credit had not the MANUFACTURERS RECORD secured these monthly reports and published statements from them, has not the time come when Congress should immediately amend the Federal Reserve Act and require that every discussion which takes place in the Board or between the members of the Board should be reported in full in order that the public may know what is being done?

And may it not be possible to carry this still further? Has not the time come when a similar requirement should be made of the Interstate Commerce Commission, so that the public may from day to day know the details of every discussion carried on by the Interstate Commerce Commission and the reasons for its decisions and the vote of each member on every question at issue?

If the sessions of Congress are open to the public—and no one would for a moment presume to say that congressional discussions should be private, why should the Federal Reserve Board and the Interstate Commerce Commission have the right to hold in secret every discussion and every vote?

Their decisions are often more far-reaching, and certainly far more powerful, in influencing the country's affairs than are the discussions in Congress, and yet these little groups of men, holding an autocratic power beyond the mind of man to adequately grasp, keep their sessions secret, reach their decisions in secrecy and the public never knows why they have voted this way or that way, what the arguments used on either side were and who voted for this or that measure.

We venture to say that one of the first movements made by Congress should be the passage of a bill requiring that every discussion on the great problems of the day in these Washington organizations shall be made public or be open to the press, just as fully as are the sessions of Congress.

Some years ago the editor of the MANUFACTURERS RECORD was a member of an executive committee of a \$3,000,000 trust company. In the four or five years which he held that position he learned a great deal about the inside of banking and finance. It had been the custom of the executive committee in that institution, as in most financial institutions, to decide on every question brought up, and once a month at a meeting of the board of directors to give merely a perfunctory statement as to what had been done without any information whatever to the directors as to the things that had been left undone or the reasons for this, that or the other. Then, after the failure of another great trust company in the same city through the fact that the board of directors had never been apprised of the acts of its executive committee, it was decided that the executive committee, of which the writer was a member, should report its proceedings in full every month to the 24 members of the board of directors.

A few of the old-time members of the executive committee, accustomed to the old methods, insisted that it would be disastrous to the business of the company to give in detail to 24

men every month all of the operations of the company, the deals in which it might be interested and the reasons therefor or those which it might have rejected. Among some of these members there was a degree of consternation as they thought of the fact that every month 24 men would have presented to them the minutes of every meeting held by the executive committee of seven men. They looked for disaster; they believed in the old system of a limited group controlling the entire work, having a board of directors merely for the ornamental use of their names and not for any practical effect of their wisdom in reaching decisions.

That was the old way in financial circles. It was a wrong way. No man has a right to permit his name to be used as a member of a board or directors without demanding that every detail of the business of the company shall be open to him and known by him, and the stockholders have a right to know what is being done and why it is being done.

In Washington there is a little group of seven men who absolutely rule the finances and the business of this country. No man outside of that little circle, which at the present time is certainly composed, in part, of incompetents, knows anything whatever as to why they reached their decision for deflation, what arguments were used pro and con, who dominated and domineered over the Board and who opposed the actions of the majority if there was a minority. If every discussion of the Board had been open to the public, this country would be infinitely better off than it is today, for before it was possible to have wrecked the business interests of the United States there would have been such an overwhelming pressure brought against the Federal Reserve Board's work as to have saved the country billions of dollars and the pledged honor of the nation to its bondholders.

There is another group composed of the Interstate Commerce Commission which decides the vast problems connected with the transportation interests of the country, and no man outside of that Board knows what discussions take place, what reasons are given for this or that, and so in the secrecy of a meeting upon which the destiny of the transportation interests hangs a little group of men decide the fate of a nation, and the 105,000,000 people in America know nothing of the reasons therefor nor of the men who voted for or against any measure.

The day of secret conclaves, secret bureaucratic methods, must pass, or else the life of this country will pass away. The time is propitious for immediate action, and the work of the Federal Reserve Board and the questions we have asked of it are indicative of the supreme necessity of an immediate decision on these points.

HOW TO KEEP FROM SLIPPING BACK.

MR. CHARLES F. WOOD, vice-president of the Warrant Warehouse Co. of Birmingham and Mobile, in referring to a page advertisement of this company in this paper, writes:

"Incidentally, it occurs to me to say that this special advertisement resulted from a determination on our part to adopt the policy set forth in your article in the same issue, headed 'Running Forward to Keep From Slipping Backward.'

"The MANUFACTURERS RECORD is one of the best, most interesting and helpful magazines which comes to my desk."

Our Greatest Crop Year, Measured in Quantity, Shows a Decrease of \$8,000,000,000 in Farm Products of 1920 Compared With 1919.

THE aggregate farm value of all crops for the United States for 1920, as compiled by the MANUFACTURERS RECORD from the latest reports of the United States Department of Agriculture, is \$10,465,015,000, compared with \$16,035,111,000, the value of all crops raised in the United States in 1919. This is a decrease in value since last year of over \$5,570,000,000, or about 35 per cent, an almost inconceivable decline, which represents nearly the total value of all crops produced as late as 1912. If, however, to this decline in crop values is added the decrease in the livestock products this year, compared with the 1919 value, it is estimated that the drastic deflation campaign of the Government has cost the agricultural interests of the country probably over \$8,000,000,000, an amount nearly equal to the total value of all crops produced as late as 1916.

Through this almost criminally produced reduction in the country's agricultural wealth, the farm interests have suffered because their crops were the most costly to produce in our history. They were forced to pay the top prices for wages and materials and now are receiving the lowest price for their finished product, not because of purely economic reasons, but by downward manipulation of the market brought about through the direct influence of the Federal Reserve Board's action in forcing restriction of credit. Not only the farming interests have been the loser under this wholly erroneous policy, but everyone, capitalist and laborer alike, are suffering. It hits the farmer the hardest, however, because most of his work is done on borrowed capital and it struck at a time when he had all at stake.

If to the 1920 crop values be added the value of the livestock products, the total wealth production on the farms of the country this year will be about \$16,500,000,000, compared with \$24,982,000,000, the value of all agricultural products in 1919 and \$22,479,000,000 in 1918.

Notwithstanding this great decline in crops values this year, the aggregate value of the 1920 crops is \$308,589,000, or 3 per cent greater than the five-year average 1914-1918 value received for all crops, and \$4,637,996,000, or 79 per cent larger than the average crop value received during the five pre-war years 1910-1914.

The value of the South's crops in 1920 is estimated to be \$4,320,460,000, compared with \$7,212,907,000 in 1919, a decrease of \$2,893,447,000, or 39 per cent, while the decrease in the rest of the country outside of the South is \$2,686,649,000, or 30 per cent.

It is a striking fact that in actual dollar loss the South, with one-third of the population and having one-third of the country's area, produced 41 per cent of the aggregate crop values of the whole country in 1920, 44 per cent in 1919 and 40 per cent during the five-year average 1914-1918, showed a decrease greater by nearly \$200,000,000 than the decline in the crop value of the rest of the country outside of the South.

There is an increase in the South's crop values in 1920 compared with the five-year average 1914-1918 of \$199,356,000, or nearly 5 per cent, while the rest of the country showing an increase in crop values during this period of \$109,233,000, or 2 per cent. The hypothetical value of all crops, by States, the total for the South, the total for rest of country outside of the South, and the total for the United States during 1920, 1919 and the five-year average of 1914-1918, as compiled from

the Aggregate Crop-Value Comparisons of the Department of Agriculture, were as follows:

VALUE OF ALL CROPS.

State.	1920.	1919.	1914-1918. 5-year average.
Maryland	\$107,847,000	\$133,726,000	\$90,512,000
Virginia	289,792,000	349,963,000	219,804,000
West Virginia	112,845,000	139,927,000	85,599,000
North Carolina	412,374,000	654,804,000	328,822,000
South Carolina	282,613,000	507,141,000	266,291,000
Georgia	323,290,000	600,416,000	397,261,000
Florida	86,503,000	103,878,000	75,493,000
Missouri	343,612,000	553,042,000	349,186,000
Kentucky	268,857,000	483,712,000	257,939,000
Tennessee	243,048,000	344,231,000	221,870,000
Alabama	240,001,000	398,586,000	241,148,000
Mississippi	226,182,000	426,741,000	249,474,000
Louisiana	172,706,000	287,919,000	197,308,000
Texas	737,400,000	1,254,006,000	641,342,000
Oklahoma	284,715,000	570,882,000	252,740,000
Arkansas	248,275,000	403,933,000	245,515,000
Total for South.....	\$4,320,460,000	\$7,212,907,000	\$4,130,104,000
Maine	\$84,688,000	\$98,470,000	\$67,839,000
New Hampshire.....	30,098,000	32,437,000	24,556,000
Vermont	59,210,000	60,642,000	42,793,000
Massachusetts	71,088,000	77,925,000	55,370,000
Rhode Island	6,336,000	7,029,000	5,359,000
Connecticut	53,590,000	66,650,000	43,603,000
New York.....	456,507,000	488,408,000	343,336,000
New Jersey.....	97,960,000	103,005,000	80,331,000
Pennsylvania	397,617,000	474,956,000	326,212,000
Delaware	20,630,000	26,590,000	20,173,000
Ohio	369,869,000	568,229,000	390,837,000
Indiana	289,751,000	467,761,000	352,952,000
Illinois	459,179,000	803,827,000	592,885,000
Michigan	303,410,000	406,107,000	267,021,000
Wisconsin	389,270,000	444,299,000	280,766,000
Minnesota	288,270,000	500,023,000	349,960,000
Iowa	459,191,000	843,465,000	558,509,000
North Dakota.....	196,171,000	295,107,000	236,834,000
South Dakota.....	191,401,000	356,828,000	256,538,000
Nebraska	306,469,000	546,220,000	356,376,000
Kansas	378,436,000	631,903,000	379,730,000
Montana	78,042,000	71,552,000	95,158,000
Wyoming	51,584,000	50,697,000	37,333,000
Colorado	149,687,000	200,489,000	117,251,000
New Mexico.....	53,626,000	69,091,000	31,431,000
Arizona	45,353,000	45,938,000	25,334,000
Utah	43,129,000	48,456,000	40,223,000
Nevada	13,244,000	15,298,000	16,504,000
Idaho	92,275,000	128,494,000	77,997,000
Washington	150,579,000	238,116,000	132,528,000
Oregon	110,115,000	143,056,000	98,908,000
California	457,750,000	510,167,000	347,466,000
Total outside South...	\$6,135,555,000	\$8,822,204,000	\$6,026,322,000
Grand total, United States	\$10,465,015,000	\$16,035,111,000	\$10,156,426,000

The corn crop of the country this year, which is reported at 3,232,367,000 bushels, is the largest ever produced. But this year's wheat crop of 787,128,000 bushels is 147,000,000 bushels less than the 1919 crop and 35,100,000 bushels less than the average production for the five years 1914-1918, and but 58,000,000 bushels larger than the average production of 1910-1914. The great corn crop this year is a marked factor in bringing our total grain output for 1920 up to 6,039,320,000 bushels, a gain of 571,275,000 bushels, or 10 per cent over the 1919 production. The 1920 total grain crop is 635,100,000 bushels, or 11.7 per cent more than the five-year average production of 1914-1918, and it is 1,107,148,000 bushels, or 22 per cent more than the aggregate grain production of the five-year average of the pre-war years 1910-1914.

With the largest grain crops on record in 1920 there was a great decrease in value because of the depression of prices of all commodities since midsummer. The value of these grain crops this year is \$4,509,561,000, or \$2,881,938,000, or 39 per cent less than the value of the 1919 grain crops, though the production of grain that year, as we have stated, was 571,000,000 bushels short of the 1920 output. In fact, the decrease in the value of all grain crops in 1920, compared with the five-year average 1914-1918, is \$489,947,000, or nearly

10 per cent, although we produced this year over 635,000,000 bushels more grain than the average production during that period.

In 1920 the United States produced 6,967,975,000 bushels of food and feed stuffs, valued at \$5,694,847,000, compared with 6,217,992,000 bushels of food and feed, valued at \$8,738,736,000 in 1919.

This year the country's tobacco crop amounted to 1,508,064,000 pounds, valued at \$318,359,000, compared with 1,454,725,000 pounds produced in 1919 and valued at \$566,709,000.

The estimated cotton crop for 1920 is 12,987,000 bales,

valued at \$914,590,000. In 1919 we produced 11,421,000 bales, valued at \$2,034,658,000. Though the cotton crop for this year is larger than for the past several years, it is smaller by over 1,000,000 bales than the five-year average production of 1910-1914.

The total value of the 30 principal crops listed in the accompanying table compiled from the December Crop Reporter, issued by the Agricultural Department, for 1920, is \$9,137,696,000, compared with \$14,047,697,000, the value of similar crops produced in 1919, and about 2 per cent less than the total five-year average value 1914-1918.

PRODUCTION AND VALUE THIRTY PRINCIPAL CROPS.

	1920.		1919.		Five-year average, 1914-1918.	
	Production.	Value.	Production.	Value.	Production.	Value.
Corn, bushels.....	3,232,367,000	\$2,189,721,000	2,858,509,000	\$3,851,741,000	2,760,484,000	\$2,612,380,000
Wheat, bushels.....	787,128,000	1,135,806,000	934,265,000	2,009,407,000	822,246,000	1,200,178,000
Oats, bushels.....	1,528,055,000	719,782,000	1,231,754,000	880,296,000	1,414,558,000	773,362,000
Barley, bushels.....	202,024,000	142,931,000	161,345,000	195,239,000	214,819,000	172,681,000
Rye, bushels.....	69,318,000	88,609,000	88,909,000	119,596,000	59,932,000	76,862,000
Buckwheat, bushels.....	13,789,000	17,797,000	15,244,000	22,397,000	15,305,000	18,231,000
Rice, bushels.....	53,710,000	63,837,000	42,790,000	114,152,000	33,369,000	44,870,000
Kaffirs, bushels.....	143,939,000	131,665,000	127,568,000	165,030,000	*70,593,000	*71,430,000
Flaxseed, bushels.....	10,990,000	19,413,000	7,661,000	33,581,000	12,922,000	29,981,000
Total grain, bushels.....	6,039,320,000	\$4,509,561,000	5,468,045,000	\$7,391,499,000	5,404,220,000	\$4,999,500,000
Potatoes, bushels.....	430,458,000	\$500,974,000	355,773,000	\$571,368,000	382,113,000	\$375,017,000
Sweet potatoes, bushels.....	112,368,000	136,629,000	105,453,000	140,706,000	74,983,000	72,030,000
Peaches, bushels.....	43,697,000	91,862,000	49,578,000	94,818,000	47,514,000	52,390,000
Pears, bushels.....	17,279,000	27,220,000	15,472,000	28,238,000	12,364,000	12,880,000
Apples, bushels.....	240,442,000	271,984,000	153,238,000	285,069,000	202,698,000	182,760,000
Peanuts, bushels.....	35,960,000	48,829,000	33,925,000	81,742,000	.....	.....
Beans, bushels.....	9,075,000	27,114,000	11,935,000	51,051,000	13,213,000	60,777,000
Onions, bushels.....	19,119,000	25,179,000	11,397,000	24,319,000	.....	.....
Soy beans, bushels.....	3,002,000	9,199,000	2,460,000	8,530,000	.....	.....
Cowpeas, bushels.....	15,495,000	35,768,000	9,423,000	25,865,000	.....	.....
Clover seed, bushels.....	1,760,000	20,528,000	1,341,000	35,541,000	.....	.....
Total, bushels.....	6,967,975,000	\$5,694,847,000	6,217,992,000	\$8,738,736,000	.....	.....
Tobacco, pounds.....	1,508,064,000	\$318,359,000	1,454,725,000	\$566,709,000	1,187,708,000	\$214,015,000
Cotton, bales.....	12,987,000	914,590,000	11,421,000	2,034,658,000	12,424,000	1,106,520,000
Cottonseed, tons.....	5,778,000	150,237,000	5,074,000	368,626,000	5,538,000	247,790,000
Hay, tons.....	108,233,000	1,809,162,000	109,152,000	2,134,170,000	99,304,000	1,309,167,000
Broomcorn, tons.....	34,000	4,263,000	51,000	7,805,000	.....	.....
Sugar beets, tons.....	8,545,000	99,396,000	6,421,000	75,420,000	6,050,000	41,840,000
Cabbage, tons.....	821,000	25,266,000	357,000	18,828,000	.....	.....
Oranges, boxes.....	27,290,000	70,125,000	22,075,000	58,156,000	.....	.....
Cranberries, barrels.....	431,000	5,313,000	566,000	4,735,000	442,000	3,650,000
Sorghum syrup, gallons.....	43,876,000	46,138,000	25,409,000	39,054,000	22,580,000	.....
Total value 30 crops.....	.....	\$9,137,696,000	.....	\$14,047,697,000	.....	*\$8,900,000,000

*Estimated.

AGRICULTURE NEEDS A "HEAD."

THE farmers made an error when they demanded that the next Secretary of Agriculture should be a horny-handed son of toil, a "dirt farmer." The Department of Agriculture is filled with experts who know all there is to know about the scientific and practical growing of crops, no matter what kind of crops they are. The great problem in agriculture is not production, but the formulation of policies likely to facilitate distribution and profitable sale of the crops after they are produced; the formulation of a national program that will assure the permanence of agriculture in America and its status as an industry able to compete with the cities for labor and credit.

No man deserves more of his country than the horny-handed son of toil. A dirt farmer is a good citizen. But the man to head the Department of Agriculture should be a great statesman, a great financier, a great economist, a great publicist and a great student of world currents. He should be able to represent adequately the vast interests for which he speaks in any convention of men, inside the Cabinet or out, and he should be able to deal in economic and financial argument with any man, be he the Secretary of the Treasury or any other officer. Valuable as may be the citizen who knows how best to grow wheat or cotton, more valuable in the Cabinet would be the man who knows what financial and national policies are for the good of agriculture as a whole and what policies are not good.

In testing a man's capacity and fitness for filling the office of Secretary of Agriculture the yardstick should be applied to the head, not the hand, of the applicant.

DEPRESSION WHICH SHOULD HAVE BEEN FORESEEN.

"YET, one short year ago, the British cotton trade was at the height of its prosperity. Never in the history of cotton has there ever been a year of such profits as 1919.

"The average dividends in Lancashire were 21 per cent. Dozens of mills made 40 per cent and 50 per cent. Cotton-mill shares went sky high and fortunes were made as sensationally as they ever were in mining or oil.

"The slump has taken everyone in the trade by surprise. No one saw it coming. Lancashire is stunned. It has fallen from the highest point to the lowest in a few months.

"This slump, too, is not like any former ones. There have always been periodical depressions caused by over-production, but this slump is different.

"It is not caused by over-production, but by causes outside the cotton trade—by tight money, high taxes, and the unsettled state of foreign exchanges."—Herbert N. Casson, London correspondent of Boston News Bureau.

If no one in the Lancashire cotton trade foresaw this slump, it was because they failed to read the speeches and pamphlets of Mr. Arthur Kitson of Stamford, England, president of the Bankers Reform League, and failed to study the world's financial position. During the war Mr. Kitson constantly warned the nation of exactly what has taken place if English financiers were allowed at the close of the war to follow their usual custom of deflation of credit.

What has taken place throughout the world in trade depression was as certain as the going down of the sun if deflation of credit was pursued by the world's dominating financial interests.

The Open-Shop Campaign Must Be Vigorously Pushed

WHAT is claimed to be a statement issued by the Executive Committee and Council of the Methodist Federation for Social Service, published in the New York Call of January 4, headed "Methodists See Grave Peril in Open-Shop Drive," is an outrageous use of the power of church organizations to misrepresent labor conditions, and, in effect, to be guilty of statements so unblushingly false that the man of average intelligence and honesty marvels that men claiming to be ministers of the Gospel can make such assertions.

This announcement, which is somewhat in harmony with a recent statement by the so-called Federated Churches of Christ in America, another organization which has no reason for existence except to give some appearance of ecclesiastical power to the little group of men who dominate it, is quoted as declaring that the fight for an open shop of the American plan of employment is:

"This movement is the embodiment of a determination repeatedly expressed in war time by certain leaders of finance and industry to 'put labor in its place after the war.' It is, in effect, a declaration of war against trades unions. It proposes to destroy the gains that were made in stabilizing industry and establishing social security by the War Labor Board.

"This open-shop campaign appeals for the support of the public on the ground that it is not opposed to trades unions, but is merely resisting the evils involved in the closed shop, and it has gained the support of many who sincerely have this purpose in mind. Yet in the ranks of its leaders are to be seen those who have long been aggressively fighting labor organizations as such, and among its active supporters are those whose open-shop policy is to refuse union men employment, to discharge men because of union membership or to require an applicant to sign a contract pledging himself against affiliation with a union."

The only form of stabilization of labor during the war were radical leaders, who taught labor to demand exorbitant wages and to give as little in return as possible. One of the greatest curses that existed during the war, which did more to break down the honesty and integrity of the people of this country than anything else, was the domination of the National Government by Samuel Gompers and his crowd of labor leaders. That Gompers has ever been able to pose as a conservative is one of the amazing things in the history of this country, considering the record made by him through his whole career. Posing as a conservative, he has been able to mislead men who ought to have had sufficient intelligence and honesty to know better than to follow his guidance.

As an ardent advocate for many years of high wages for labor, the MANUFACTURERS RECORD has never criticised any honest movement intended to secure a fairer rate of wages for labor than existed in former years, but under Gompers' leadership labor was taught during the war to be inefficient, to be slackers in civilization's greatest struggle for life, and the aggregate number of union men who went on strike during the war exceeded the total number of soldiers that we sent to Europe. These soldiers were compelled to offer their lives as a sacrifice for civilization; they had to endure untold hardships and be ready night and day for any possible work, whether in the camp or on the battlefield. While they were standing between civilization and barbarism, union labor, under the leadership of Mr. Gompers, was demanding a rate of wages from 10 to 15 times as great as the soldiers were being paid, and this union labor, under Gompersism, was not giving a fair measure of work, even during the hours in which it was employed. Strikes, riots, inefficiency to the extreme were the dominant notes heard from nearly every labor organization during the war. And yet there are men calling

themselves ministers of the Gospel who dare to uphold such rank, rotten work and to refer to it "as stabilizing industry and establishing social security by the War Labor Board." So arrogant and dominating became the work of these radical labor organizations that the splendid type of American citizenship which many members of these organizations have a right to claim was overwhelmed by radicalism. Indeed, the good men in the labor unions, however much they may have bemoaned radicalism, permitted themselves to be carried on its wave of destruction.

Until the intelligent, efficient, honest-minded men in labor unions break away from the lead of such men as Gompers and his crowd, and make membership in a labor union a synonym of efficiency and integrity, labor unions must necessarily as a whole be classed as a distinct curse to laboring men and to the country. Since radical leaders in the ministry, more radical and more dangerous than radical leaders in the union organizations, have been carrying on their socialistic and anarchistic campaign, the time has probably come when men who believe in the open shop as an American principle of labor must not only organize locally, but must organize nationally and meet every attack on the open shop by giving the public the actual facts.

Last summer the MANUFACTURERS RECORD took the ground that the time had not yet come when there should be a great national organization in behalf of the open shop. We believed then that the work should be done by local organizations, each in its own community, standing for the right of every man to work untrammelled by the enslaving chains of radical unionism. The aggressive work that radicalism is doing through these so-called church organizations is changing the situation, and we believe the time has now come when the men in this country, employers and employees, bankers, merchants and consumers and all others who believe in the right of the individual workman working for whom he pleases, and the individual employer employing whom he chooses, must unite in a broad campaign of education.

From the day when this country surrendered its sovereignty and cowardly yielded to the railroad brotherhoods in order to permit its trains to be run, since there was not sufficient backbone in Washington to say that trains should run and that riots should not be permitted in the operation of our railroads, we have had an increasing tendency of radical unionism. This has been carried to the point where a change becomes absolutely necessary in order to save this country from a complete domination by radical labor unions and radical, socialistic, anarchistic ministers who, clothed in the livery of Heaven, are serving the devil as vigorously as it is possible for them to do.

The open shop stands for individual liberty, for Americanism; the closed shop stands for the enslaving chains which would completely hold men in subjection, body and mind, the labor men of the country, the employers and the consumers alike.

The MANUFACTURERS RECORD insists that the highest possible rate of wages shall be paid, but no man has a right to deny another man the privilege of working whenever and wherever he pleases and at whatever rate of wages he is willing to accept. No man has a right to deny another man the privilege of working eight hours, ten hours or twelve hours if he prefers to do so in order to be independent and achieve the greatest results for himself and his family.

The open shop means safety for this country.

The closed shop, if universally enforced upon the country, would mean the destruction of our Government.

WE SHOULD BAR OUT IMMIGRATION FOR THE PRESENT.

THE New York Herald, which is an ardent advocate of immigration, in a recent editorial on the subject, says.

"In Europe the cry is, 'We want work!' In this country we want men who will work. Our Government must not put up bars against those we need."

The Herald might have changed its statement and said there are millions of people in this country who are daily crying out "We want work, but cannot find work!"

Our land is full of men who have been thrown out of employment by the destructive deflation work of the Federal Reserve Board. Millions of people are idle and millions are in poverty because of this deflation campaign.

We have in this country today more men seeking work than we have work seeking men. For our agricultural needs there is no necessity for the next year or two of bringing in any immigrants. Every bit of work that needs to be done in this country can be handled for the next year or two by the men who are here. To bring in immigrants merely means to intensify the situation and to create more demand for jobs where there are not now enough jobs for our own people.

There is much talk about the need of laborers on the farms, but it would be folly to increase our labor on the farms until we bring back a prosperity which will enable our country to consume what the farmers are now raising.

Some want immigration in order to break down wages and to have less bother in dealing with labor. That doctrine comes straight from the lower regions. It is not a doctrine of humanity; it is a doctrine of the dollar above humanity.

We fully appreciate the desire of some employers to have such an ample supply of labor that they can always have their choice from men eager for work, and at low wages, but fortunately not all Americans are built that way. Men who have come up from the ground floor, or even the basement, would far prefer to see the demand for labor exceed the supply and thus give assurance that the laborer will have fair wages, decent treatment and comfortable surroundings. Moreover, this country cannot afford to increase the supply of Bolsheviks in America, nor can we afford to encourage the spirit of bolshevism here by so increasing the supply of labor that millions of men will walk the streets vainly seeking work.

We have too many aliens in this country even now. We need to shut off immigration until we have Americanized those that are here, and thus saved ourselves from the dangers of a vast horde of aliens who cannot speak our language and who know nothing and care less for our laws.

The people of Europe are no more eager for work than are the idle men in this country who are seeking work. The Herald intimates that in this country we want men who will work. There are millions of men ready for jobs. They are as ready to work as are the Europeans who are anxious to come here. "Our Government," says the Herald, "must not put up the bars against those we need." Our great need just now is to find work for the people at home, and until a wiser financial system prevails in this country we shall have many idle men eager for every job that is available.

Europe must be reconstructed. European governments will do all in their power to keep able-bodied, intelligent, efficient workers at home, and they will do all in their power to encourage the idlers, the inefficient and the bolshevistically inclined to emigrate to America. We will see American papers flooded with the propaganda put forth through European agencies and the steamship lines eager to bring millions of people to this country in favor of the policy which the New York Herald is advocating. It will be proclaimed from the housetops that we need European immigration, and that we

must welcome these immigrants because they are seeking a home in this land.

Propaganda of this kind very generally has some influence back of it which it not for the best interests of America. Our interest as a nation, our safety as a country, the progress and prosperity of our own people, all demand that we shall for a year or two put up the bars against immigration until we have adjusted ourselves to the new conditions and are in a position to be more careful in selecting those permitted to land on our shores and whose offspring will be among the leaders of America in future years.

A SOUTHERN GOVERNOR WHO SAID "HE WAS TOO BUSY TO READ HIS BIBLE OR SAY HIS PRAYERS" MADE A DISMAL FAILURE OF HIS POSITION.

John J. Brady,

Representing

Jas. P. Marsh & Company.

Chicago, Ill., January 3.

Editor Manufacturers Record:

In a language so rich as ours in adages, there is probably none so true as "That there is none so blind as they that won't see."

For in the past three years, whilst a resident of Atlanta, Ga., I had the opportunity to read the MANUFACTURERS RECORD weekly, but I did not avail myself of the opportunity. I simply glanced at the construction department and from there gleaned what information I wanted; not once did I read the editorials nor the news articles. **I was too busy—what a fallacy—certainly I was too busy, chasing rainbows, whilst the solid matters were right under my nose, and I believe I am not lonely either in this respect.**

Your issue of the 23d ult. came into my possession, and as usual I was glancing over it idly, and by some fortuitous circumstances I saw the article on page 101 written by Mr. Eckel, and looked at it casually. I then read it carefully, with the result that I memorized it, and as a consequence I was able to settle an argument that was referred to me in regard to the military preparedness of France and Germany in 1914.

Since then I have read every article in the MANUFACTURERS RECORD, and I am not satisfied. I am going to be able to patter them as a child does its prayers, and as soon as I get settled I am going to be a subscriber.

Thanking you for the information in your columns, I remain,

Very truly yours,

J. J. BRADY.

BETTER TIMES MUST COME.

MR. JAMES A. GREEN, president of the Matthew Addy Company, Cincinnati, O., in a letter to the MANUFACTURERS RECORD, writes:

"A happy new year and a great many of them to you. I read your paper with religious fidelity. Some years ago I used to find fault with it because I thought you were publishing a sectional journal—not sectional in any bad sense, but a journal that was intended for only part of the country. But I have changed my idea. You are now publishing a national journal, and a paper that appeals to everybody in the North, East, South and West—that is, to any man who loves his country and who cherishes high ideals of patriotism, and of business. I wish you more power.

"I read with great interest your editorial in the issue of the 23d ult., in which you took a bit from one of our market reports as a text. It is all wrong the way things have been going of late. And the worst of it is that there seems to be no possible remedy except to grin and bear it and muddle through as best you can. There never has been a time in the iron trade when there has been such a paralysis as at the present time, and never such a time when conditions were so impossible, that is, with costs in the skies and prices on the ground. Here are two contradictory conditions that cannot be harmonized. Nevertheless American business is going to come out triumphant. Our trade is sound, the potentialities of America are almost beyond limit, and what we need now is optimism, regarding the present as merely a temporary phase, and looking hopefully forward to the future, bending every effort to make the best of the present and prepare for the better times which inevitably must come."

JUDGE GARY IN FAVOR OF AN ADEQUATE PROTECTIVE TARIFF, DESPITE RUMORS TO THE CONTRARY.

MR. GEORGE K. LEET, secretary to Judge Gary, writing under date of January 7 in reply to a letter from the **MANUFACTURERS RECORD**, says:

"I am instructed by Judge Elbert H. Gary to acknowledge receipt of your letter of the 3d instant, and to say there is no foundation for the statements as to his position with respect to an adequate protective tariff.

"In this connection he wishes me to send you a copy of a pamphlet containing a statement made by him on January 8, 1917, that together with some other statements he has made from time to time, represents his views, which have remained unchanged."

The letter to Judge Gary was called forth by many rumors in Washington to the effect that he was opposing an adequate protective tariff at the present time. We are glad to learn from this statement from Mr. Leet that the views of Judge Gary, stated by him in January, 1917, on the tariff question remain unchanged.

In a marked paragraph in the pamphlet issued at that time by Judge Gary and sent by Mr. Leet appears a very important statement of his views in regard to adequate protection of American labor and American interests against the cheap labor of foreign countries, and he now reaffirms his devotion to the doctrine then so clearly stated, which was as follows:

"Again, our country should be placed and kept on a parity with all other countries. I refer to the tariff question. I have said before and I now repeat, this question should not be considered or treated as a political or partisan one. The greatest good to the greatest number should in this, as in all public questions, be the sole inquiry and determination. Facts should be ascertained and honest, sensible, practical results secured. Prohibitive tariff rates, so-called, or schedules that are so high as to permit a producer to oppress the consumer should not be permitted; but tariff rates on luxuries we do not produce in this country should be reasonably high so as to produce revenues for the Government, and tariff rates on the things coming from foreign countries similar to those we produce, whether in the forests or in the fields, in the mines or in the manufactories, should be sufficiently high to protect our producers, including the wage-earners, against cheap foreign labor and its results, and so as to put our country and its people on a fair and even basis with all other countries and peoples. Possibly this could be secured to a certain extent by anti-dumping provisions or by reciprocity conditions. At any rate, it is not reasonable or fair to our people to place them in a position of disadvantage. Nearly all foreign countries have tariff provisions in their laws which prevent our producers from selling there, and we should have like security."

Those who have been circulating the reports in Washington to the effect that Judge Gary was no longer in favor of a protective tariff have been doing him, as shown by this statement, a very grave injustice, and we rejoice to know that with his broad knowledge of world affairs and his deep interest in the maintenance of the best business conditions and the best payment for American labor he realizes the need of adequate protection.

The letter from the editor of the **MANUFACTURERS RECORD** which called forth the reply of Judge Gary's secretary and the sending of the marked paragraph as given in the foregoing was as follows:

Daytona, Fla., January 3.

Hon. E. H. Gary,
Chairman, United States Steel Corporation,
New York.

My dear Judge Gary—Senator Harding's overwhelming election was not simply due to a repudiation of the policies which had prevailed under the present Administration, but largely due to Senator Harding's definite pledges made through the entire campaign of an adequate protective tariff for the agricultural, as well as the industrial interests of the country.

The ablest review of the agricultural situation ever given by any man in this country, in my opinion, was a speech by Senator Harding at Minneapolis. In that address he graphically portrayed the position which this nation had reached which demanded a decision as to whether we should break down and destroy the agricultural life of America, or whether we should maintain a well-rounded farm life and industrial activity. Any country which

breaks down its farm prosperity in the supposed interest of industrial expansion dooms itself to certain destruction.

I am not unmindful of all the problems which face this country as a creditor nation and as a seeker after world trade, but if we win world trade for manufactures by the sacrifice of the smaller industries and of agriculture, we will go the certain road to ruin of every other nation in the world's history which has followed that policy.

It is being aggressively claimed in Washington that you and other leaders of great business interests are opposing the emergency tariff bill, and are in general opposed to an adequate protective tariff on the ground that a protective tariff would lessen Europe's ability to pay its indebtedness to us, and lessen the ability of the great industries of the country to market their products throughout the world. You have been so farseeing and so broadminded in your study of national and international problems that I sincerely trust that the report which comes to me constantly from Washington is incorrect. Moreover, in times past a protective tariff has been demanded not only for the safety of the industries, which, like the steel industries, grew up under protection, but in order to maintain adequate wages for the working people of this country against the low wages of Europe and the Orient.

With Senator Harding's many pledges to the farmers and to the laboring men and to the people at large of an adequate protective tariff, any failure to carry out such a plan would violate his pledges, and if it became the general thought of the country that great business interests were in this movement there would be such a revolt on the part of the farmers and the laboring people as to endanger the very existence of this Government.

Conditions in the world today make it impossible to base all actions of Government and of business upon methods which might have been maintained in the past. Suddenly the whole world has awakened to a new conception of a broader opportunity for the laboring man and the farmer, and these interests can be brought into an alliance greater in its power than that of all the banking and big industrial interests combined. We are in a new world epoch unlike anything which human history has known.

I know that you are fully aware of this situation. It seems wholly unnecessary to emphasize it, but I am doing so merely in order to give an excuse for an expression of the hope in me that you and other leaders in industry are not opposing adequate protection for the safeguarding of the agricultural interests and of the smaller industries of the land.

I would greatly appreciate the privilege of publishing your views on the subject. Very truly yours,

RICHARD H. EDMONDS, Editor.

Certainly Judge Gary has made it clear where he stands on a tariff which will protect American laborers, farmers and manufacturers alike from being flooded with foreign-made goods produced by labor ranging down to 3 cents a day.

A GOOD EXAMPLE TO FOLLOW.

Citizens Bank & Trust Co.,
Jefferson, Ga., January 8.

Editor *Manufacturers Record*:

Attached find check, for which please send the **MANUFACTURERS RECORD** one year to Mr. H. T. Mebley, Jefferson, Ga.

Mr. Mebley is as fine a citizen as we have, with wide influence. The subscriptions I am sending you are among our most useful and prominent citizens. I am anxious to get that class to read your publication.

If it was you or I, how lonely we would feel with only two in the United States Senate in our party with us. How do you suppose Mr. Wilson feels? The Southern farmer will rejoice when Houston has passed. You do not know the independent thinker from Georgia as I do; some thinking him a visionary man, but watch the newly elected Senator from Georgia after he becomes a member of the Senate. I read after both of you, and I am sure the highest aim of each is for justice and righteousness and the defense of the South.

T. S. JOHNSON, President.

President Johnson is such an enthusiastic admirer of the **MANUFACTURERS RECORD** that he is constantly endeavoring to induce people in his community to subscribe, believing that in doing this he is rendering them a distinct service. We would be glad to have all our subscribers engaged in the same work.

FACTS THAT PROVE DRASTIC CREDIT RESTRICTION.

A BANKER tells us that an automobile company rated at more than \$200,000 recently came to him for a loan of \$15,000. The note was sent to the regional reserve bank for rediscount. It was returned with the comment that it was against the policy of the regional bank to rediscount any automobile paper.

A little later a fertilizer company, rated at more than a million, with a splendid business record extending back many years, applied to the same local banker for a loan of \$40,000. This note also was sent to the same regional reserve bank for rediscount. It was returned with the comment that it was against the policy of the bank to rediscount any fertilizer paper.

These two instances happened in one local bank within the very recent past. They could be multiplied over and over again.

In one of the big cotton centers last week a factor who has been in business for a generation and whose credit has never been questioned arose at a meeting of the local cotton exchange and stated that, although he had been in the cotton business all his life, he, for the first time, found himself unable to obtain from any bank in the city a loan of even \$15,000, although ready to offer whatever amount of cotton was desired as security. A director in the largest of the local banks was present. He was asked to explain why such things could be. "The answer is simple," he replied. "We have not got the money, and we cannot get it."

We are greatly mistaken if it is not true that the Treasury has before it now a report from one of the members of the Federal Reserve Board showing that credits could be extended more than \$2,000,000,000 without impairment of the legal gold reserve. We also state without fear of successful contradiction that a dominating figure in the Federal Reserve Board has declared in private conversation that the reason financial accommodation is not given on perfectly acceptable paper is that it would defeat the purpose of the Board, which is so to tighten credit that goods must be thrown on the market, irrespective of original cost or of the suffering to result.

Any man who says there is no restriction of credit in the United States, whatever figures he presents to support his contention, is attempting to disseminate a false impression, as some thousands of local bankers would testify if put under oath.

OPERATION OF THE WAR FINANCE CORPORATION.

"ONE of the anomalies of this turn of affairs, in which an abundance of claptrap argument and loose thinking has been indulged, is to find this sort of faulty class legislation extolled in organs like the MANUFACTURERS RECORD of Baltimore, modestly calling itself the 'exponent of America,' which berates the Government's 'cowardly surrender' to the railroad brotherhoods in 1916 and loses no opportunity to have a fling at the Federal Reserve System and its board. Reluctance to lend money where there is no sound assurance of getting it all back again is, it seems in some eyes, a crime against the republic."—Newark Evening News.

The ignorance of the Newark Evening News is not appalling. Men in high places have been equally ridiculous in their statements.

There are officials in Washington who apparently have never heard of the raw material banks of Holland. The Secretary of the Treasury is himself responsible for the impres-

sion that the War Finance Corporation was being asked to do some extravagant and unbusinesslike thing.

A skilled carpenter goes to a gentleman and says: "You know my skill. I have no lumber and materials and no credit with which to secure them. But if you will furnish them I will bring them back to you in the form of a handsome cabinet. You can then pay me for the work." Is it unbusinesslike for the gentleman to trust the carpenter with the materials?

The raw material banks of Holland—as well as private traders of the great nations—have been sending raw materials into Germany, waiting a few weeks and receiving back finished goods. The Germans have been permitted to keep a share as payment for work done. When the operations of the War Finance Corporation were ordered suspended there were before it applications for great quantities of cotton. The purchasers wished time in which to convert the cotton into finished goods, for which they had orders. Had this cotton been sold on such terms last May the goods would have been manufactured and sold by now and full payment would have been made.

It is impossible for the War Finance Corporation legally to finance any unbusinesslike project. Its function is inherently nothing more than an extension of credit for a reasonable period under warranties that are as safe as business warranties can ever be. The idea that the corporation is expected to advance "money where there is no sound assurance of getting it all back again" is sheer nonsense. The assistance of the corporation is asked not because the risks are too great for private financing, but because private financing has broken down. That is why the corporation advanced millions to the railroads. The roads were not trying to get something for nothing. They had to get money from the corporation because the Federal Reserve Board had fixed matters so that the money could not be got from the banks.

We more than suspect that the War Finance Corporation stands a smaller chance of losing money from any advances it may make than the Treasury does from lending \$5,000,000 to King Constantine. The Treasury, which is so anxious to lend millions to an Armenian Government that does not exist, and to the Constantine Government that ought not to exist, is strangely solicitous lest it lose a dollar or two in attempting to ease the stupendous difficulties confronting the American producer.

MAKING DEATH THE PENALTY FOR VIOLATION OF PROHIBITION.

THE persons who allege that prohibition cannot be enforced have forgotten to take into account the reptilian proclivities of the lawbreakers. It was their lust for profit-taking, at any cost to the community, that spelled the doom of the saloon elements in the United States. It is their lust for profit that is now doing more for the ultimate complete enforcement of prohibition than all other causes combined.

There were thoughtless men who were willing to buy bootleg whiskey at any price. But these same men are unwilling to buy wood alcohol for beverage purposes, no matter how cheap. No man who buys bootleg whiskey now knows whether he is headed for the jail or the grave. One swallow may make a beast or a corpse. They who obey not the law in little things will not obey it in big things. The man who is willing to sell whiskey is willing to sell poisoned stuff and call it whiskey. The bootlegger has become the nation's premier murderer. The customers he does not kill he drives away in abject terror.

None need worry about the enforcement of prohibition. It is progressively enforcing itself. The dispensers of death-dealing poison are attending to the job. They are the ones who have made death the penalty for violation.

IMMEDIATE BUYING AS A NECESSITY TO THE RESTORATION OF NORMAL BUSINESS CONDITIONS.

A MOVEMENT to encourage immediate buying and thus aid in restoring normal conditions and enable men to return to steady employment has been started in New York by the National Prosperity Bureau of that city. This accords with the campaign begun recently in the South by business and civic organizations and chambers of commerce for the spreading abroad of the spirit of optimism and a speedy readjustment of the manufacturing activities of the country. The Southern organization is known as the National Order of Gloom Chasers. It is doing a work directly in line with the attitude taken in a recent editorial in these columns entitled "If You Have the Money, Build That House Now."

The bureau organized in New York has been formed by a number of men of national repute, representing the leading industries of the country, men who appreciate the necessity of combined effort and prompt action to convince the public that bottom prices have been reached in many lines, and that the time to buy is now.

The promoters of these campaigns are thoroughly convinced that the active assistance of all the progressive commercial and civic bodies of the country united in a common endeavor to preach optimism will have much to do toward dissipating the clouds of depression which hang over the country. They assert that the merchandise and goods in the stores must be moved to make room for other goods which re-employed men will produce. It is the part of patriotism and the duty of a good citizen to buy what he needs at present, for these purchases are what keep America employed. When the public stopped buying, unemployment began, and the best way to open the doors of the closed mills is to get the public to buy what it needs now.

The following statement has been given out by the executive director of the bureau:

"Our program to date embraces the use of the printed word and picture in every media available. We now have a staff preparing advertising copy for the newspapers and magazines, and another staff getting up advertising material for the trade press. It is not improbable that the prosperity posters, about which the campaign will be centered, will feature more advertising than has accompanied any similar drive in the country's history. Already we have hundreds of requests from advertisers all over the country for copy to use in connection with local celebrations. We hope to do most effective and immediate work through the chambers of commerce and the boards of trade. These are the units of commercial energy in their respective communities. We reach them directly through individual membership in the various national organizations who make up our advisory committee.

"Department stores, and, in fact, the stores of the hardware man, electrician, shoe man, grocer, butcher, baker, builder, etc., may all blossom forth as aids in spreading the gospel that a strong belief in the United States, and with it the purchase at once of what is needed, is all that is required to open up the factories again and put the industrial train back on the track."

In connection with the foregoing, the Florida Times-Union of Jacksonville in a recent editorial on "Necessary Buying and Selling" remarks pertinently:

"The conditions throughout the country are so serious just now that they are well worth considering from every angle that can be thought of.

"Although many lines of goods are so short that there is not enough in stock to meet the normal demand, still factories are closing down because people are not buying. Their excuse is that

prices are too high and they are going to wait until they come down.

"If this policy of no buying is carried to extremes it may mean that the public will not only economize themselves out of work, but that, with more shops shut down, greater shortage will result and prices may become higher than ever. We can scarcely afford to have this happen.

"This is a matter that we are all vitally interested in. We realize that more goods must be sold or many factories will have to quit for want of orders for spring shipment, and this will create more trouble and hardship in the industrial sections. There must be more buying in order to make more selling and more manufacturing, and this must be realized both by the buying public and the retail stores. The latter should shave the prices as close as possible in order to meet the demand for lower prices, and then the public should buy as freely as it can afford to."

Good judgment dictates that certain periods and seasons be taken into consideration by the careful buyer, whether of railroad securities, stocks, bonds or general merchandise. The present would seem to be a particularly favorable occasion for the public to seize the many opportunities which are offered by the retail stores for the purchase of seasonable goods at low prices.

A notable move in this direction is the advertising spread broadcast in New York by the American Wholesale Corporation of Baltimore: "Wanted—\$5,000,000 of desirable merchandise for spot cash." Jacob Epstein, president of the corporation, says:

"Talk of crisis is several weeks old. We have pulled through, and there is no point in further medicine to cure a malady from which the patient has recovered. But there is marked need of a tonic to get him back to strength. The tonic is new business. If I were not quite sure of my diagnosis, I would not be likely to exchange \$5,000,000 for goods."

A WAR LOAN TO CONSTANTINE!

IT is reported in the newspapers that the Treasury is preparing to advance \$5,000,000 as a loan to Greece the moment the Department of State recognizes the Constantine Government. The money is to be advanced under the authority of the law passed when we entered the war to assist in the financing of our Allies.

The Treasury has succeeded in discovering technicalities which permit it to withhold payment of guarantees given by the Government to the railroads. The Treasury has devoted its utmost powers to the prevention of the rehabilitation of the War Finance Board on the ground, among others, that no funds are available. The Treasury has held up its hands in horror at the mere suggestion of any advances to American farmers to save them from impending ruin. Yet this same Treasury, although the war is over, and although money advanced to Greece would not be for the benefit of an Ally, but for the advantage of a monarch who devoted his every effort to the defeat of the Allies and of the United States, seeks, under an old grant of authority, to send American money to the exchequer at Athens!

The thing is typical of the sort of financial direction we have had in America these recent months. The wonder is not that Mr. Harding received a plurality of 7,000,000 in the November election, but that a candidate standing for the retention of such administration as we have had recently received any votes at all. Perhaps it merely went to show that Lincoln was right when he said you can fool some of the people all the time.

SHALL THE ADAMSON BILL BE ALLOWED TO STAND?

Baker & Holmes Co.
Jacksonville, Fla., January 4.

Editor Manufacturers Record:

We have read with considerable interest your editorial in this week's MANUFACTURERS RECORD upon the subject of the Adamson Bill, which was passed by the Congress of the United States during the first term of President Wilson.

You speak of the fact that this was passed by a spineless Congress. At the time this bill was passed, it did seem that the whole country had an idea that it was a very religious duty to give to Mr. Gompers and his organization anything that they demanded.

We judge now that we have a Congress that has some backbone. Don't you think it would be a good idea for you to begin the agitation that the first thing the next Congress should do would be to repeal the Adamson Bill?

We would like to have your views upon this subject. You have never failed to express your views, whether Mr. Gompers approved of them or not.

What do you think of beginning a campaign calling upon Congress to repeal this Adamson Bill?

JOHN D. BAKER, Vice-President.

The Adamson bill was a cowardly surrender to a threat of the railway men to tie up all transportation if their demands were not immediately met. President Wilson yielded to their threats and surrendered the Government to them, just as clearly as if they had appeared as a small army of bolshevists and demanded the nation's surrender. On the part of Congress and the Administration it was the most cowardly surrender ever made by this nation. It marked the downfall of national independence; it was almost treason, for it betrayed the country to its enemies, since any man is an enemy to the nation when he says to the President and to Congress: "Unless you grant my demands, I will starve the whole country into submission." The time to stand for honor and the nation's life was right then and there, and live with honor or die in the attempt. The railroad brotherhoods were false to the nation's honor, false to all claims of patriotism, false to every instinct of patriotism and in the long run to their own interests. They were bolshevists of the most pronounced type, even though they carried no red flags and still claimed to be patriots.

After the bill had been forced through a cowardly Congress of Republicans and Democrats, the Brotherhood leaders refused to call off the strike until the President had signed the bill, though he had given them his word that he would sign it. He was compelled to hurry home from the seashore in order to sign the bill. Four gold pens were used in signing it, and these were presented, one each, to the four Brotherhood officials who had bulldozed the nation into this cowardly surrender!

While the MANUFACTURERS RECORD thoroughly believes in high wages, it does not believe in any such bulldozing work on the part of any labor organization, and it feels assured that the time is near at hand when Congress must have the moral and, if need be, the physical courage to repeal the Adamson law as one of the greatest and most cowardly stains ever placed upon the nation's honor.

VALUE AND SIGNIFICANCE OF THRIFT WEEK.

THE celebration of National Thrift Week from January 17 to January 23 is attracting more than the ordinary amount of attention throughout the country, this annual event fortuitously coinciding this year with the 300th anniversary of the landing of the Pilgrims. The American Bankers' Association, leading life insurance companies, organizations of credit men and other national and local organizations are behind the movement to teach thrift to the children in the schools and establish savings clubs in industrial centers and spread abroad wherever possible the idea of thrift and its true value and significance.

It is not yet generally realized or understood by our people that thrift is simply the wise use of money. The money must

first be earned, of course, but there is no relation whatever existing between miserliness and thrift. The former is a negative quality, while the practice of thrift enables any honest worker to set aside a certain portion of his wage or income for the emergency that will be sure to come later on, either in the form of an unusual opportunity for investment or in the shape of an enforced expenditure at a time of illness or other misfortune.

We need the lesson thrift can teach us, and we can take a leaf in this respect from the book of the French people, where 15,000,000 out of a population of 39,000,000 have accounts in savings banks.

Instruction in the proper use of money is much needed in this country. Proper methods of teaching young people the virtue and necessity of thrift and the general principles of business economy are likely to yield satisfactory results to the individual and in time to react in a beneficial manner upon the country's material wealth and prosperity.

PRESIDENT WILSON UNFORTUNATE IN THE USE OF FIGURES.

PRESIDENT WILSON, in his message vetoing the joint resolution of Congress reviving the War Finance Corporation, utilized certain figures in support of his action against the measure that it were well to draw still further into the light. These figures must have been furnished the President by some one who, to say the least, was disingenuous. Mr. Wilson in his veto message says:

"Exports of domestic products have not declined since the armistice. On the contrary they have greatly increased. From an aggregate value before the war of less than two and one-half billion dollars, and of about six billion dollars the last year of hostilities, they rose in the calendar year of 1919 to more than \$7,900,000,000, and this figure probably will be exceeded for the last calendar year. For the first 11 months of the last calendar year we have exported more than seven and one-half million dollars' worth of domestic merchandise."

Mr. Wilson's figures, or, to ascribe them to their probably proper source, Mr. Houston's figures, for the hand of Houston is writ large over all the veto argument, cannot be gainsaid as a presentation of half-truth. Trouble is, they are only half-truth, which, if we remember our Tennyson correctly, is "ever the blackest of lies."

In an exhaustive analysis of our 1920 foreign trade compared with that of 1914, Mr. O. P. Austin, statistician of the City National Bank of New York, shows that the increase in quantity of merchandise exported in the six-year period 1914-1920 was, as nearly as can be determined, 35 per cent, while the increase in quantity exported in the six-year period 1908-1914 approximated 25 per cent. The number of pounds of merchandise exported in 1920 (including all articles in which quantities can be shown) was only 35 per cent greater than in 1914, while the stated value of the 1920 price was 225 per cent greater.

Particularly interesting in this connection may be cited the figures on cotton—raw and linters—exported. In 1914 there were exported 4,760,940,301 pounds; in 1920, 3,543,743,487, a decrease of 25.6 per cent, but the value of the cotton exported in 1914 was \$610,475,301, as against \$1,381,707,502 in 1920, or an increase over 1914 of 126.3 per cent. Similarly, corn exports show an increase of 54 per cent in quantity, but 240 per cent in value; wheat, 31 per cent in volume and 238 per cent in value; flour, an increase of 83 per cent in quantity and 242 per cent in value.

We might quote indefinitely from the statistics prepared by Mr. Austin upon the question of tonnage and value relativity, but would add nothing to the basic fact that the figures adduced by Mr. Wilson in support of his veto are, as half-truths, worse than useless. Fortunately, Congress recognized the falsity of the postulate and overrode the veto by an overwhelming vote, Democrats joining with Republicans in their rejection of the Presidential argument.

ACTIVITIES NOTED THROUGHOUT THE SOUTH

INSPIRING STORY OF BUSINESS REVIVAL.

Improvements and Extensions to Railroads and Industrial Plants at Cost of Many Millions of Dollars Outlined in Manufacturers Record This Week.

Indicative of the upward trend in industrial, municipal and housing developments in various sections of the South are the many reports from railroads, municipalities, industrial corporations, building and loan associations, good-roads commissions and similar bodies, outlining the expansions planned for 1921, as published in the columns of the MANUFACTURERS RECORD this week. Prominent among these announcements is the expenditure of \$18,000,000 in extensions and improvements by the Norfolk & Western Railroad; the development of a 1100-mile system of good roads in Georgia, some of which is complete and the remainder in course of construction, at a total cost of more than \$17,500,000; construction of 390 miles of highways in Mississippi, partly complete, entailing a cost of \$4,000,000; the launching of big programs for municipal improvements in many cities in the South, together with increased activities in industrial and building development, as indicated by the increased volume of permits issued during the first few weeks of the new year; the bringing in of oil wells in new fields in Texas and Arkansas, and the optimistic spirit revived in textile mill centers as a result of the placing of new orders of substantial size permitting the operation of quite a number of mills at full time.

From various parts of the Carolinas come encouraging reports from textile men, who are taking on new faith and facing the future with increased confidence as a result of optimistic reports in trade and business circles following the convention last week of the National Hosiery and Underwear Manufacturers' Association at Charlotte, N. C., where the opinion was expressed that although but 2 of the 100 mills represented were now running three and four days a week, within 8 or 10 weeks all of the mills will be running full time.

Cotton-spinning mills in the vicinity of Greenville, S. C., have just received large orders for print cloths, pajama checks and similar goods, permitting resumption of operation on a 48-hour basis, following a readjustment in wage scale of from 25 to 40 per cent reduction. Several Gastonia, N. C., mills similarly have resumed full-time operations, indicative of the upward trend, and some mills are running day and night, with orders now in hand insuring operations at this capacity until April. Orders for yarns and all kinds of textiles are increasing in volume, and prices are improving, so that a general feeling of hopefulness and confidence is being established.

Oil developments of considerable magnitude are now transpiring. Last week a unique well was brought in near Fort Stockton, Tex., with an initial flow of 200 barrels an hour at 93 feet, and finally settled down to 400 barrels daily. Operations in the heavy crude field at Hull are being continued with renewed vigor as a result of several successful wells recently, and there are indications of a strong come-back in the West Columbia fields.

Union county, Arkansas, dream of oil has become a reality with the bringing in of a 10,000-barrel daily oil gusher near Eldorado. This is attracting the attention of oil men from the Southwest and Mid-Continent fields, and may mean the launching of a big well-drilling campaign in the vicinity.

The cause of reduction in takings by the various oil companies is clearly set forth in these columns by W. C. Teagle, president of the Standard Oil Co. of New Jersey, who states that there is no danger of an overproduction of oil from a world standpoint, the reduction in takings being due to inability of the companies to provide sufficient facilities for handling the oil from the fields and for storing it at the refineries. Additional pipe lines are being provided at enormous cost, new tank fields built for storage purposes and extensive additions and improvements to many refineries throughout the South are under way.

Building activities continue to increase, as indicated by the number of permits issued during the first two weeks of the new year, and architects and contractors in the various States report

that early spring will see the inauguration of a big industrial and housing program. More than \$1,250,000 will be expended in Norfolk this year upon streets, sidewalks, sewers and similar improvements following the completion of a \$1,000,000 program in 1920. Work is progressing upon the construction of a \$600,000 office building for the York-Bousch Corporation. B. H. Gruver of Washington announces plans for construction of dwellings to cost \$250,000. New Orleans building associations in 18 months made nearly 6500 loans for more than \$25,000,000, and are reported in good financial condition, only waiting for final readjustment of business and trade conditions to aid the home-owning public more extensively. At Palm Beach a \$200,000 building and loan association was organized last week. If half of the projected construction projects are started this year in Mobile, Ala., it is said that the city will experience one of the most active building years in its history. Although \$1,000,000 was expended in municipal improvements in Okmulgee during 1920, the program for this year calls for an expansion in practically every line, including new sewers, water-line extensions, hospital additions and improvements, public library and much new paving. The organization of a new \$3,000,000 power company at Monroe, La., may result in the erection of a large electric plant in the gas fields nearby for distribution of electrical power for lighting and power purposes in North Louisiana. Southern Arkansas and possibly Texas and Missouri points. Winston-Salem has employed a Pittsburgh firm to draft a city plan to relieve congestion on the downtown streets and suggest needed city improvements of all kinds. A sanatorium at El Paso, Tex., is being erected at a cost of \$400,000. Reports from Wheeling, W. Va., show that a number of the steel mills and similar plants in the territory are operating at or near capacity, with work in hand for many months.

One of the most modern acid phosphate and complete fertilizer manufacturing plants has been placed in operation at Savannah by the Southern Fertilizer & Chemical Co.

Good-roads improvements continue to be pushed vigorously in the various States, and efforts are being made to make available bond issues voted some time ago but held up because of high prices for materials and labor and the low prices offered for the bonds.

New Orleans Building and Loan Associations Make Nearly 6500 Loans for Over \$25,000,000.

New Orleans, La., January 15—[Special.]—A number of local homestead associations report that they have more money in hand than for some time, and are ready to aid home-owning of the thrifty. They are not, however, reaching out for new business, being content to supply the needs and requests of their shareholders and awaiting the final readjustment of business and trade conditions.

During the period from June 15, 1919, to December 31, 1920, a total of 6424 loans was made through the 34 building and loan associations in the city for a total of \$25,204,030. While most of these loans were for new residences, some was used in business-house improvements. A summary of loans made during the above period by each of the individual associations is given herewith. An inspection of the table will show something of the amount of business done by each of the 34 associations and their relative size and importance. The list follows:

Number of Loans.	Total Amount.	Number of Loans.	Total Amount.
202	\$567,120	113	\$634,750
129	446,450	204	716,659
22	92,900	219	837,300
89	347,600	177	897,475
132	464,900	107	319,000
140	569,010	192	854,900
215	627,700	299	792,155
394	1,168,175	58	258,700
413	1,341,650	106	236,500
127	473,180	109	531,900
540	2,513,800	207	834,700
101	384,750	391	1,572,400
279	1,036,999	142	454,400
114	327,800	263	1,540,575
120	490,330	423	1,042,439
51	231,300	340	1,631,150
128	472,650		
68	206,550	6,424—Totals.....	\$25,204,030

Louisville Company Acquires Wagon Business of Studebaker Corporation and Will Increase Output.

Louisville, Ky., January 11—[Special.]—The Kentucky Wagon Manufacturing Co., R. V. Board, president, has acquired the complete wagon line of the Studebaker Corporation, South Bend, Ind., the latter company to devote its attention in future to the development of its automobile business. The Studebaker wagons will be produced in the Kentucky plant, an increase in production being contemplated to about 60,000 wagons of the farm type annually. In addition to wagons, the Kentucky company manufactures automobiles and trucks, manure spreaders, lime sowers, and operates a foundry and drop-forging plant which contracts for outside work. According to Mr. Board, the company possesses ample capital to take care of the transaction, the company having a surplus of \$1,000,000 in addition to its capital of \$1,500,000.

Tennessee Foundry Plants Consolidated.

Clarksville, Tenn., January 17—[Special.]—The Clarksville Foundry & Machine Co. has taken over the stock of mill supplies and plant of the Drane Foundry & Supply Co. This will enable the Clarksville company to carry a full line of mill supplies, for which there is a big demand, and to permit the manufacture of interchangeable chilled plow points and an increased volume of repair work. Manufacture of sashweights in quantity production is anticipated. The plant adjoining the Red River furnace and the Drane plant will both be operated and the office moved to the latter place.

The Clarksville company has enjoyed an extended trade over a wide territory, in addition to points near here. A specialty is made of certain articles used in soil-pipe fittings, etc., and a large volume of work is done for the blast furnaces and coal mines in the section. An extensive trade in cast-iron meter boxes and other castings for municipal purposes has been developed.

\$2,000,000 Army Hospital at Fort Bliss, Tex., Nears Completion.

On a beautiful site overlooking the grounds of Fort Bliss and the city of El Paso, Tex., the Government is rapidly bringing to completion a \$2,000,000 hospital established for the care of sick and disabled soldiers. It will have accommodations for 800 patients and quarters for a nurse corps of about 50. Ample provision will be made for the recreation of convalescents. The structure is built in units, which will make it a simple matter to add additional accommodations when the need arises. The six ward groups of three buildings each will be connected with roofed and protected walks; the buildings are all tile, with rough plaster stucco finish. Glass sun porches and open-air porches are provided. The builder is the Sumner-Sollitt Company, Pullman Building, Chicago.

Savannah, Ga., January 15—[Special.]—A total of \$4,025,000 is the estimated cost of construction work completed here during 1920, according to J. R. Eason, inspector of buildings. This shows a decided increase over construction work completed in 1919, which amounted to \$1,770,645, and that of 1918, which amounted to \$768,675.

During 1920 an eight-story reinforced concrete apartment-house was built at a cost of \$400,000; a 10-story brick annex to a hotel cost \$200,000; a six-story brick and concrete apartment-house at a cost of \$225,000; 18 two-story brick-veneer dwellings, \$360,000; 36 two-story frame dwellings, \$277,350; 9 two-story brick dwellings, \$189,000; 46 one-story frame bungalows, \$266,500; 93 one-story frame dwellings, \$171,800; 52 one-story frame dwellings remodeled, \$92,750; 8 one-story brick dwellings remodeled, \$17,000; 63 one-story frame dwellings, \$84,100; 134 frame garages, \$78,550; 2 three-story reinforced concrete garages, \$145,000; 1 four-story store building, \$100,000; 1 two-story brick flour mill, \$75,000; a four-story brick and concrete store, office and theater building, \$125,000; two-story high school of brick, \$400,000; 2 one-story portable school building, \$7500; cotton compress and shed, \$150,000; 2 brick theater buildings, \$325,000; planing mill, \$30,000; 10 open sheds, \$8450; 11 houses moved, \$4150; 16 new porches, \$6250.

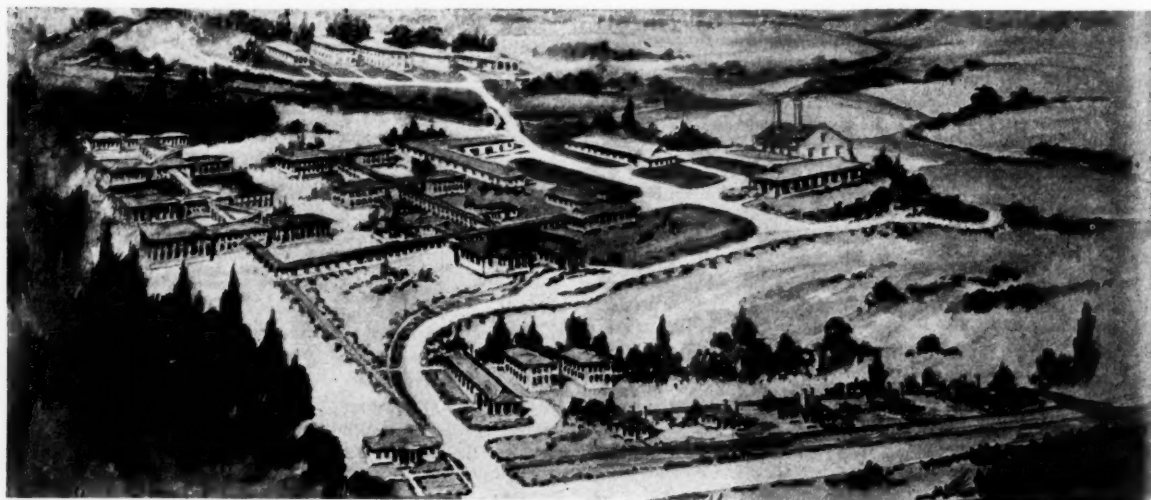
Extensive Paving and Improvement Program for Norfolk.

Norfolk, Va., January 17—[Special.]—Announcement has just been made by the Norfolk City Council of tentative agreement upon new paving and general improvement which will cost \$1,265,263.66. In 1920 the city completed a million-dollar paving program, and when that program was begun it was announced that the 1921 program would cost a million and a quarter. The new budget is the biggest of its kind in the history of the city, and covers nearly every street in Norfolk which is badly in need of improvement.

New paving work alone, as outlined in the program, including \$50,000 for rights of way, will cost about \$1,000,000, while resurfacing streets, installing drains and general improvement work proposed will cost \$199,076. New sewers proposed will cost \$73,966.68, and water-main extensions will cost \$59,674.50.

Beautification of Smith's Creek and Newton's Creek, estuaries of the Elizabeth River running up into residential sections, will cost \$20,000. This will provide bulkheading, filling, etc.

The idea of the 1921 program, like that of 1920, is to first pave the thoroughfares that are used most by through traffic. All of the items in the 1921 program "start somewhere and get there," as one city official puts it.



ARMY BASE HOSPITAL GROUP OF BUILDINGS AT FORT BLISS, EL PASO, TEXAS. ACCOMMODATIONS ARE PROVIDED FOR 800 PATIENTS.

OIL STRUCK IN UNION COUNTY, ARKANSAS.

**Gusher Flows From 10,000 to 30,000 Barrels Daily—
Intense Interest Manifested—No Leases on the
Market.**

Eldorado, Ark., January 15—[Special.]—Union county's dream of oil, twice interrupted last year by bringing in of gas wells, is today a reality, for the Busey-Daniels well No. 1, located one mile west of this place, blew in as an oil gusher on January 10 with an estimated daily flow of from 10,000 to 30,000 barrels at a depth of 2230 feet, and has been flowing steadily since that time. Conservative estimates place the flow at about 10,000 barrels daily. It is located in Township 31, Section 17, Range 15, in what is known as the Armstrong tract, and is owned by Dr. S. T. Busey of this place.

Extreme efforts were made to save the oil shortly after the flow started, when oil blew 40 feet over the top of the derrick. Men were put to work to dam up a small ravine near the well in an effort to provide a temporary retainer. But within two hours the oil had reached a depth of six feet, and was rising rapidly.

News of the discovery spread quickly, and it was not long before hundreds of persons were on their way to the well from the Homer field in Louisiana. Trains coming into the town were crowded with interested and curious persons. Trading in leases suspended suddenly when news of the well spread, and there was not a single lease on the market.

The Busey-Daniels well is located about one and a half miles from the Constantine gasser, which is said to be producing 5000 feet daily, yielding 27 barrels of oil. The Homer gas well, located between these two wells, is producing a great amount of gas.

Manganese Ore Discovered 20 Miles North of Selma, Ala. — Depth of Deposit Not Ascertained — 10 Car Loads Already Sold.

Selma, Ala., January 17—[Special.]—The discovery of manganese ore in the hills near Plantersville, Dallas county, about 20 miles north of Selma, followed by the sale of 10 car loads of the ore to Birmingham steel and iron interests, has aroused keen interest among residents of the section where preparations are now being made for developing the mining of the mineral. Representatives of various iron and steel companies are on the ground making investigations as to the quantity and quality of the ore, which is found in the chain of hills west and north of the Southern Railroad track and extend in a northwesterly direction, being a continuation of the Red Mountain range of Jefferson county where rich deposits of iron ore abound, and which furnish large quantities of raw product for the Birmingham plants.

Morgan Richards, secretary of the Selma Chamber of Commerce, advises the MANUFACTURERS RECORD as follows regarding the discovery: "The outcroppings of this ore is in a stretch 8 or 10 miles long. No borings have been made developing the depth of the deposits, but we are now in correspondence with the State Geologists with this end in view."

The ore that has been shipped so far has been scrapped from the top of the ground on the hillsides, and what lies beneath is purely a matter of conjecture. The necessary materials for dynamiting have not been received, and it will be some time before a scientific survey of the fields can be completed. It is believed that the recovery of the values from the ore will not be difficult, and it is said that samples thus far have assayed about 22 per cent of mineral, a good showing for rock deposit of this kind.

Georgia and Florida Shade-Grown Tobacco.

Quincy, Fla., January 15—[Special.]—J. T. Budd, Jr., & Co. has been organized for the purpose of growing, packing and selling Georgia and Florida shade-grown tobacco. It will cultivate 50 acres of this product on its own plantation, and in addition purchase possibly 100 acres more, or about 100,000 pounds of tobacco after it has been harvested.

Building will be on a small scale, the farms being already improved, and it will therefore only be necessary to construct 26 acres of tobacco shade, two large barns and a few tenement-houses. All of the materials necessary have been purchased.

FIRST M. E. CHURCH, TULSA, OKLA.



Structure to be erected for First M. E. Church, Tulsa, Okla., at cost of \$350,000. It will be 120x230 feet, of French Gothic architecture. Wight & Wight of Kansas City, Mo., are the architects, and the Long Construction Co., also of Kansas City, is the contractor.

Winston-Salem to Have City Plan.

Winston-Salem, N. C., January 17—[Special.]—The Chamber of Commerce has announced that a contract has been signed with Morris Knowles, Inc., of Pittsburgh to make a city plan covering certain immediate problems and those relative to the future growth of the city that must be solved in order to enable the best possible development. Representatives of the company are expected to arrive in the city within the next few weeks. The plans were consummated through the efforts of the Civic Council of the Chamber of Commerce, of which R. M. Hanes is chairman.

Attention will be paid to the location and system of major streets for the purpose of caring for traffic adequately and efficiently, and for solving the need for automobile parking area in the business section.

A system of parks, boulevards and playgrounds will be worked out, and the basis for a zoning plan established. The plan will cover the initial steps for a complete city plan, but those problems that are to be studied and upon which recommendations are to be made now are considered the most pressing.

Mobile Expects Busy Building Year.

Mobile, Ala., January 17—[Special.]—Should half of the now proposed construction projects be carried out in Mobile, this year will be one of the most active in that line since the United States entered the war, according to architects and others directly interested in the building trade here. In addition to many new residences, of which there is an acute need here, as elsewhere, a large number of big building projects will be completed. One architect, discussing the situation, said: "I believe Mobile will have one of her biggest building years. Architects do not tell their plans in advance, and for that reason I would not feel free to tell of the proposed projects. However, we are facing a good and record-breaking year."

At present a number of business houses and office buildings are being erected and others improved, and it will not be long before others get under way.

Construction Activities in the South Represented by Building Permits Issued.

Athens Shows Increase of \$300,000 Over 1919.

Athens, Ga., January 15—[Special.]—Building activities during 1920 exceeded the previous year by more than \$300,000, according to J. W. Barnett, city engineer. The total amount of money represented by building permits issued during the past year amounted to \$885,195, including new work estimated to cost \$742,855 and repairs and additions to cost \$152,340. In 1919 the total amount of money expended for construction of all kinds amounted to \$589,000.

Amarillo Activities Show Nearly \$1,000,000 Increase.

Amarillo, Tex., January 15—[Special.]—During 1920 permits for construction work of all kinds in this city were issued representing expenditures amounting to \$2,105,225, compared with permits issued during the preceding year for work estimated to cost \$1,119,560. During the past year, according to H. B. Jones, city engineer, 228 permits were issued for dwellings to cost \$1,219,315 and 46 for business houses to cost \$896,740. In addition to 66 permits for repairs and alterations to properties of all kinds, costing \$79,170.

In 1919 the total permits issued for the city amounted to \$1,119,560. Just outside the city limits a mill and oil refinery were erected at a cost of \$850,000, making the total for the immediate vicinity \$1,969,560.

Columbia Activities Decrease by Nearly \$300,000 Over Preceding Year

Columbia, S. C., January 17—[Special.]—Building activities here during 1920 showed a decrease of nearly \$300,000 as compared with the previous year, according to W. J. May, inspector of buildings. During the past year 965 permits were issued for new buildings and repairs to cost approximately \$1,151,937, as compared with 1161 permits issued in 1919 for work to cost \$1,442,775. During the past year 139 permits were issued for new work to cost \$740,700 and 826 for repairs costing \$411,237, and during the preceding year 219 permits were issued for new buildings costing \$1,167,000, and 951 for repairs to cost \$275,775.

Greensboro Building Permits Amount to \$1,300,000.

Greensboro, N. C., January 15—[Special.]—Building permits issued here during 1920 amounted to \$1,302,247, as compared with \$864,455 for construction work during the preceding year. It is estimated that the city is three years behind in its building program. Hundreds of new residences are needed, as well as many business houses, and it is believed that early spring will see a general revival of activity.

In 1914, when prices of materials and labor were low, the estimated cost of city building amounted to \$441,918, and in 1915 to \$437,797. In 1916 it dropped to \$326,031, and in 1917 to \$248,110, including a new county courthouse and a college building. Practically the same stagnation obtained during 1918, when permits amounting to \$267,440 were issued, omitting the American Exchange National Bank building and the \$175,000 addition at the North Carolina College for Women. The year 1919 started off with great building activity, but war prices for both labor and material called a halt to a mammoth construction program.

Houston Shows Increase of More Than \$1,500,000.

Houston, Tex., January 15—[Special.]—Building permits issued here during 1920 were more than \$1,500,000 above those issued during the preceding year, according to A. J. Banto, structural engineer. During 1920 a total of 4294 permits was issued for work estimated to cost \$8,531,447, as compared with 4065 permits issued in 1919 for work to cost \$6,981,618. During 1920, 916 permits were issued for 379 dwellings to cost \$3,451,824, while 46 permits were issued for stores and business houses to cost \$2,084,695, and 45 warehouse buildings to cost \$1,208,138 were also approved. Factories and machine shops costing \$367,944 were included in the total, while garage permits for work to cost \$367,350 were issued. Additions and remodeling permits amounted to an expenditure of \$410,085.

Permanent improvements in 1920 were represented by 1334 permits, while temporary improvements to the number of 2870 were recorded. During the preceding year 1432 permits were issued for permanent work and 2633 were issued for alterations, etc. During 1920 \$7,829,896 was expended for new work and \$791,561 for repairs, etc., while in 1919 new work amounted to \$6,281,395, and other work to \$590,313.

Savannah Building Permits and Construction Work Completed During 1920 Both Increase.

Savannah, Ga., January 17—[Special.]—During 1920 building permits, representing a total expenditure of \$2,974,575, were issued here as compared with a total of \$2,192,515 issued during the preceding year. Construction work actually completed during 1920 represented an expenditure of \$4,025,000 as compared with \$1,770,645 in 1919 and \$768,675 in 1918.

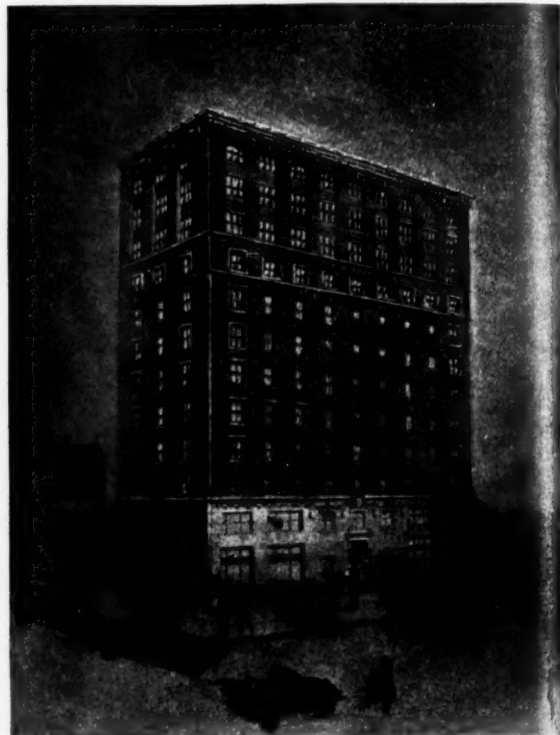
During 1920 a total of 663 permits was issued, August being the banner month, when improvements to cost \$620,200 were approved. In 1919 651 permits were issued, and October was the high month, when construction work to cost \$689,000 was approved.

Sherman, Tex., Shows \$150,000 Increase.

Sherman, Tex., January 15—[Special.]—Building activities during the past year exceeded those of 1919 by more than \$150,000, according to Beures compiled by H. A. McKinstry, building inspector. During 1920 a total of 202 permits was issued for work estimated to cost \$669,742, including 172 permits for residence work to cost \$293,242, and 30 permits for business property improvements to cost \$376,500. Permits issued during 1919 amounted to \$500,000.

New Office Building Costing \$600,000 at Norfolk.

Work is progressing on the construction of the \$600,000 office building being erected by the York-Boush Corporation at Norfolk, Va. This structure is 53x121 feet, 12 stories, and will accommodate six stores on the street level. The remaining floors will con-



\$600,000 OFFICE BUILDING FOR NORFOLK, VA.

tain about 200 offices, the four upper floors being especially equipped for physicians. Herts & Robertson of New York are the architects, and E. W. Minter & Co., also of New York, the contractors. Other contracts let include: Heating and plumbing, W. G. Cornell Company; elevators, Otis Elevator Co.; electric wiring, Cortlandt Engineering Co.; all of New York.

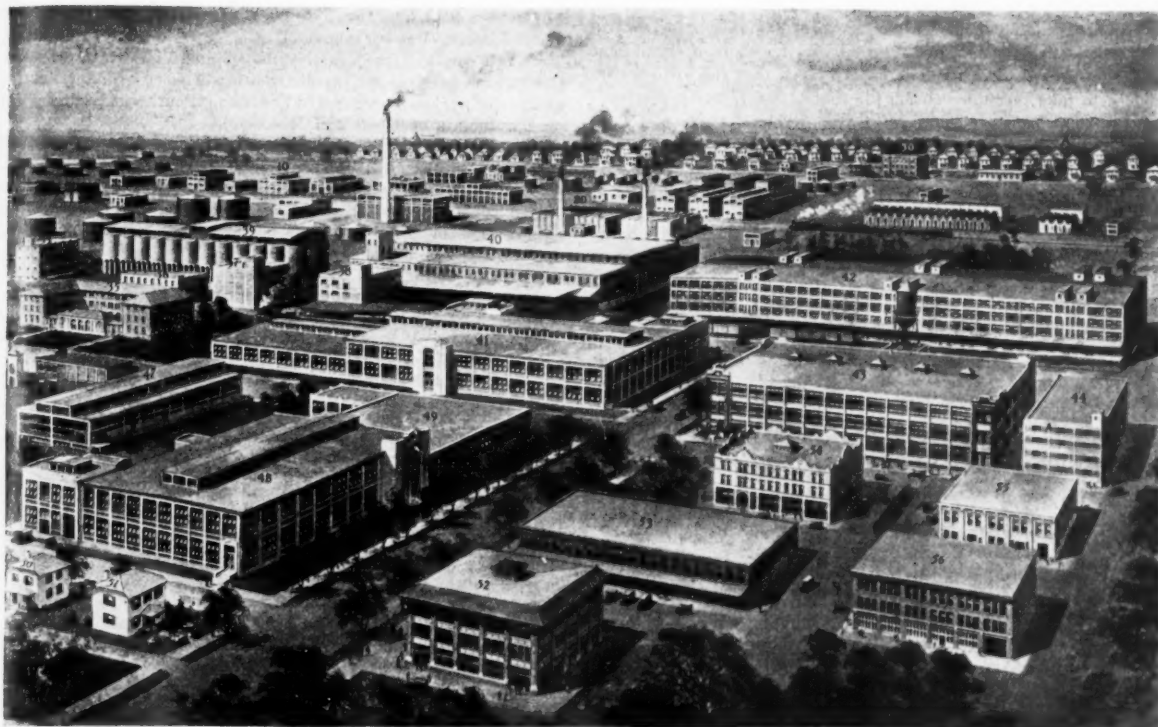
West Virginia Steel Mills Running at High Capacity.

Wheeling, W. Va., January 17—[Special.]—In the face of general dullness in the steel world, the Riverside mill of the National Tube Co. at Benwood, W. Va., is not only working continuously, but is exceeding all tonnage records and employing more men than it ever has before. The total number of men on the payroll of the company is between 2350 and 2400, all of whom are working on the same scale of wages prevailing throughout last year. Other subsidiary mills in the Wheeling district of the Steel Corporation are also operating. The Carnegie mill of the United States Steel Co. at Ballaire is operating on a full-time basis, and the Laughlin plant of the American Sheet & Tin Plate Co. at Martins Ferry is being operated to about 80 per cent of capacity.

Tampa Phosphate Shipments Quadrupled in a Year.

Tampa, Fla., January 15—[Special.]—More than 1,274,000 tons of phosphate rock were shipped from this port during 1920, as compared with 289,746 tons shipped during the preceding year. The greatest amount of phosphate moved during one month was in August, when 156,671 tons were shipped. One of the encouraging features of the year's record is the fact that a much larger percentage than formerly was intended for foreign shipments, this amount being not far behind the coastwise movement. During the past 12 months a total of 545,611 tons shipped was for foreign consumption and 728,780 tons for coastwise consumption. In 1919 foreign shipments amounted to 105,468 tons and coastwise shipments to 184,278 tons.

COMPOSITE PHOTOGRAPH OF BUILDINGS ERECTED IN SOUTH AND SOUTHWEST BY TURNER CONSTRUCTION CO.



The above view is presented as an example of the type of buildings erected in the South by the Turner Construction Co. of New York. Following is the key to "Southern City."

- A—Concrete Houses for Humble Oil & Refining Co., Houston, Tex.; C. H. Haupt, Engr.
- 1-10-30-30-33—Humble Oil & Refining Co., Houston, Tex.; C. H. Haupt, Engr.
- 34—Central Supply Co., Big Stone Gap, Andover, Va.
- 35—Georgia Baptist Hospital Nurses' Home, Atlanta; Burge, Stevens and Conklin, Archts.
- 36-37-38—Chattanooga Plow Co., Chattanooga, Tenn.
- 39—American Agricultural Chemical Co., Pierce, Fla.; A. B. Arnold, Owner's Engr.
- 40—American Agricultural Chemical Co., Jacksonville, Fla.; A. H. Nickerson, Engr.
- 41—Arkray Mill, Gastonia, N. C.; Robt. & Co., Archts.

- 42—Union Terminal Warehouse Co., Jacksonville, Fla.; W. M. Marsh, Archt.
- 43-44—Thatcher Spinning Co., Inc., Chattanooga, Tenn.; J. E. Sirrine.
- 45-46-47—Diamond Match Co., Savannah, Ga.; H. F. Hallock, Owners' Engr.
- 48-49—Flint Mfg. Co., Gastonia, N. C.; Robert & Co., Archts.
- 50-51—Concrete Houses for Humble Oil & Refining Co., Houston, Tex.; C. H. Haupt, Engr.
- 52—Fred. E. Gilbert, Jacksonville, Fla.; Howard Chapman, Archt.
- 53—J. G. Christopher Company, Jacksonville, Fla.; Ferro Construction Co., Archts.
- 54—G. A. Dreka, DeLand, Fla.; T. M. Weathers Co., Archts.
- 55—J. G. Christopher Company, Jacksonville, Fla.; Howard Chapman, Archt.
- 56—J. G. Christopher Company, Jacksonville, Fla.; Howard Chapman, Archt.

Encouraging Outlook for Southern Building.

That there is room for nothing but optimism in any consideration of Southern industrial activity is the opinion of J. H. P. Perry, vice-president of the Turner Construction Co. of New York. This company opened a Southern office last February, when it had under construction a large refinery for the Humble Oil & Refining Co. at Baytown, Tex., and now has completed or has in course of construction about a score of other important projects, a composite photograph of which appears in our columns this week.

Regarding the general situation in the South, Mr. Perry says:

"While at present the South is undergoing the same period of depression that is occurring practically all over the country, there is no room for anything but optimism as to the future. It is difficult to forecast just when we may expect a return of industrial activity, but even now there seem to be indications that conditions generally are beginning to ease off.

"The building program for the South has conceived considerable proportions, and in practically every section and in every city of any size building prospects are the most encouraging.

"There is a great need for buildings of various types, and these needs are now being recognized and plans being made whereby, at a little more propitious time, construction work will actually be undertaken. The contemplated program will include schools, apartment-houses, hotels, hospitals, dwellings and industrial plants of all types. The railroads, fertilizer companies and cotton mills, with their allied industries, will open up many new developments.

"The industrial future of the South seems unlimited and bright and near."

Since the establishment of its office the company has executed or now has in process of construction jobs for the following:

- Central Supply Co., Big Stone Gap, Va.
- Diamond Match Co., Savannah, Ga.
- A large spinning mill and warehouse for the Thatcher Spinning Mills at Chattanooga, Tenn.
- New cotton mills for the Arkray Mills and the Flint Manufacturing Co. at Gastonia, N. C.
- Storage bins for the American Agricultural Chemical Co. at Pierce, Fla.
- Three buildings for the Chattanooga Plow Co. at Chattanooga, Tenn.
- A nurses' home for the Baptists of Georgia, in Atlanta, Ga. This contract contemplates the erection of a nine-story reinforced concrete hospital building, the construction of which will be begun in the very near future.

Steamship Service From Mobile to West Coast.

Birmingham, Ala., January 17.—[Special.]—Opening of an office in Birmingham by Page & Jones, steamship representatives, is believed to be the starting of a big water transportation business from the Birmingham district down the Warrior River, and thence by boats sailing from Mobile monthly or twice a month for California points. Already a considerable tonnage of pig-iron and cast-iron pipe have been shipped via the steamship lines represented by the firm, the boats going through the Panama Canal and touching at San Pedro and San Francisco and making connections with boats for Seattle.

Oil Developments at Summerville.

Summerville, S. C., January 17—[Special.]—Further drilling on the Burton oil well, the "Mabeleanor," has been temporarily suspended pending the arrival of the proper material for control should the property develop into a wild well. Signs of oil and gas became so much more pronounced last week that the drillers concluded to take every precaution for control before going deeper.

With the definite assurance that both oil and gas had been struck, the only question being as to quantity, activity in the leasing of lands has become great. One farmer owning a property two miles from the well offered quarter-acre lots for sale at \$100 each, and almost immediately sold 256. It is understood that the Burton interests, which own the "Mabeleanor," have secured leases on approximately 36,000 acres of land in the vicinity of the well. No additional stock in the "Mabeleanor" is being offered for sale, but owners of the original stock have been offered 10 to 1 for their holdings.

Drilling will be continued so soon as materials which have been ordered from Texas arrive.

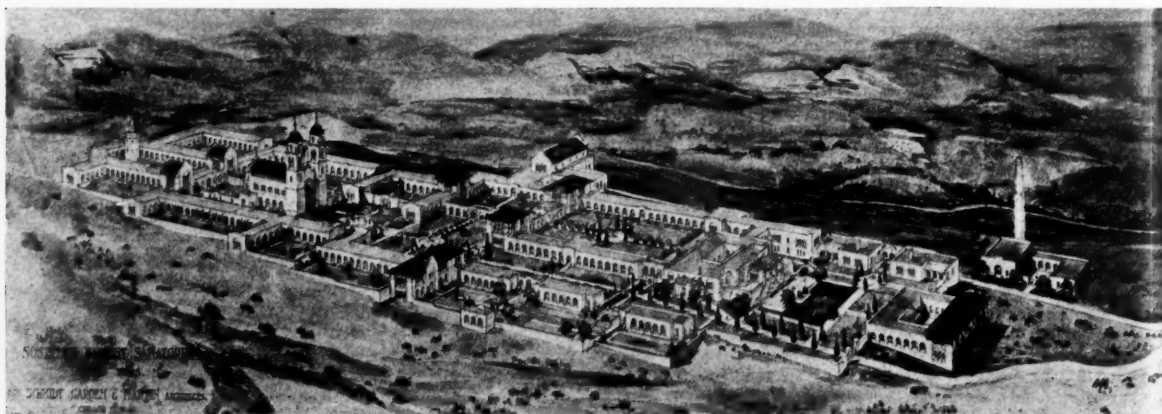
Okmulgee Improvements Cost Nearly \$1,000,000— Plans for 1921 Include Many New Projects.

Okmulgee, Okla., January 15—[Special.]—During 1920 public improvements costing \$967,225 were completed in this city, according to a statement of T. P. Paxton, commissioner of public works. The work included the erection of water dams and retaining walls and equipment costing \$106,094 for the city's new \$500,000 water plant, placed in operation several months ago; construction of water lines costing \$63,783; erection of a sewage-disposal plant at a cost of \$250,000; completion of three new fire department stations and purchasing new equipment costing \$100,000; construction of new paving at a cost of \$267,000; erection of a hospital addition costing \$30,000.

During this year about twice the amount of paving, sewer work and water-line extension will be undertaken. A public library building will be erected at a cost of \$100,000, and a hospital addition will involve the expenditure of a similar amount. A new negro hospital will be built at a cost of \$50,000. Four miles of new paving are now being constructed.

Southern Baptist Sanatorium to Cost \$400,000.

The Baptist Home Mission Board of Atlanta is expending \$400,000 to erect the Southern Baptist Sanatorium at El Paso, embracing men's and women's infirmaries, power and refrigeration plant, superintendent's building, septic tanks, pipe lines, etc. Richard E. Schmidt, Garden and Martin of Chicago are the architects, represented by Lehmann & Wuehrman of El Paso. The W. C. Hedrick Construction Co. of Dallas, Houston and Fort Worth is the general contractor. H. L. Stevens of El Paso has the contract to install refrigeration.



\$400,000 SOUTHERN BAPTIST SANATORIUM, EL PASO, TEX.

Organization of \$3,000,000 Power Corporation.

Monroe, La., January 17—[Special.]—Developments show that the Union Power Co., a \$3,000,000 corporation organized at Shreveport last week by a combination of the interests of the Frost-Johnson Lumber Co. and of J. S. Cullinan of Houston, Tex., contemplates the construction of giant electrical plants in the Monroe gas field for the distribution of electricity for lighting and power purposes over North Louisiana, Southern Arkansas and possibly points in Texas and Mississippi.

The plans of the new company were disclosed in its charter and further confirmed by representatives of the corporation. The charter gives the company this authority:

"To construct, acquire, own and operate pipe lines for the transmission of natural gas, the use of natural gas for producing power, and for the manufacture of electric light and electric power, and to that end to own and operate electric-light plants, and to erect, acquire, own and operate wires for the transmission of such electric light and power and the safety thereof."

The company, it is said, is amply financed, and is to begin work immediately in the construction of gas-pipe lines and electric-power plants. The Frost-Johnson Lumber Co. and J. S. Cullinan have transferred to the corporation their natural-gas rights in thousands of acres of land in Union parish, Louisiana, and in Union county, Arkansas, within the proved gas field.

25 New Steel Barges for Water Transportation of Steel Products.

Wheeling, W. Va., January 15—[Special.]—That the Carnegie Steel Co. will increase its water transportation of steel products is indicated by the placing of an order with the American Bridge Co. for a fleet of 25 steel barges, which will be completed and ready for use by July 1. The barges will be 175 feet long, 25 feet across the beam and 11 feet deep. While these barges will be used principally on the Monongahela River, yet they will be available for steel shipments to New Orleans and other Southern markets.

Will Erect Dwellings to Cost \$250,000.

Washington, January 15—[Special.]—B. H. Gruver, 616 Union Trust Building, of this city, has announced plans for 26 brick dwellings to cost \$250,000. George T. Santmayers of Washington is the architect. The buildings will be 20x40 feet, with roofs of slate, tin and tile. The dwellings will have floors of hardwood and edge grain pine, and be modernly equipped in every respect.

Real Estate Year Book.

The Year Book of the Real Estate Board of Baltimore for 1921 is a large and valuable work, containing a deal of detailed information about the real estate business, including extracts from the building laws of the city, a table of land values, tables of cost of ground rents, estimates as to gross rentals warranted, the laws relating to rents and their termination, besides much other material concerning the city and State governments, the National Association of Real Estate Boards and other organizations.

Perpetual Timber Supply Through Reforestation As Basis for Permanency and Paper Making

EXPANSION OF PAPER-MAKING PLANTS AT BOGALUSA CONTEMPLATES ADDITIONAL
\$8,000,000 EXPENDITURE AND VAST REFORESTATION WORK.

[One of the greatest economic problems which this country has been facing for years is the destruction of its forests. Millions of acres of land in the South and elsewhere lie idle following the work of the sawmill. Vast stretches of unutilized land mar the country and add nothing to its prosperity. When the timber has been once cut it has generally been accounted that, like the water which has passed over the wheel, it cannot do its work again.

For years efforts have been made to create a reforestation work on the part of large landowners. But as reforestation means years of waiting, but little progress has ever been made in this country. Indeed, many people have questioned whether the cut-over pine lands of the South, for instance, could ever be utilized for reforestation, and many efforts have been made to find some way to turn these lands into agriculture.

Combined with the decreasing timber supply, threatening the entire nation's lumber interests, has been the effect that this would necessarily have on climatic conditions and also on the nation's supply of paper. Far-reaching problems as these are, their solution has seemed impossible, but the Great Southern Lumber Co. in Louisiana, which is doing a reforestation and paper-making work, gives assurance of the feasibility of reforestation and also of the profitable operation on a large commercial scale of paper mills using the waste products of pine sawmills and other pine timber generally.

A few weeks ago the Manufacturers Record received a telegram from the Great Southern Lumber Co. that it proposed to build four more units to the paper mill which it has had in operation for some time, and in connection therewith it would begin the reforestation of its cut-over pine land as rapidly as the timber was removed. The building of these mills alone will involve an expenditure of about \$8,000,000. As the Great Southern Lumber Co. has the largest sawmill in America, with a capacity of 1,000,000 feet a day, and owns about 550,000 acres of virgin timber land, its plan of building paper mills and the reforestation of its land seemed of sufficient importance to justify a comprehensive investigation. For this purpose the Manufacturers Record sent Mr. Courtenay De Kalb, a distinguished chemist and technical expert, to make a special study of the whole situation in connection with this proposed work.

The scheme is so far-reaching in its ramifications and means so much in the increased paper supply of the country, in the reforestation of millions and tens of millions of acres of cut-over land and for broadening the whole industrial development of the South, that it has seemed wise to devote three comprehensive articles, the second of which appears in this issue, written by Mr. De Kalb after a most thorough study on the ground, of all that has been accomplished by this lumber company and of all the plans which it has matured for its vast expenditures for paper-making and for its revolutionizing reforestation work. These articles will appeal with great force not only to every lumber man in the country and to every consumer of paper, but to all other people interested in the question of an adequate supply of lumber to meet the ever-expanding needs of our land.—Editor Manufacturers Record.]

By COURTENAY DE KALB.*

No. 2.

When the Great Southern Lumber Co. began its development of Louisiana and Mississippi pine timber and proceeded to create a modern city around a mammoth sawmill in the virgin forests of Washington parish, Louisiana, the capitalists interested in the venture had no plans beyond the production of lumber. The stumpage available in the 550,000 acres of land was so great—running into 10 figures expressed in terms of board feet—that it was evident that no less than 40 years would be required to strip the timber. Consequently, there was time in which to develop a comfortable city. The vision of this was clear in the mind of Col. W. H. Sullivan when J. M. Clendon cut down the first tree on the site of Bogalusa and made room for the tents of the little company of pioneer lumbermen in 1906.

At that time few men cast a thought about the rapid destruction of the Southern forests, and fewer had conceived a remedy. With characteristic American recklessness everyone was then cutting timber and speeding up production, content to make the most of these rich natural resources while they lasted. Very consciously the lumbermen, though dealing with a living and

renewable basic material for their industry, treated it, nevertheless, as a wasting asset, as if it were an unrenewable mineral deposit. The copper miner cannot help himself, because a ton of ore once extracted is gone forever. New veins may be growing somewhere else for future generations of men, but no more copper will refill the fissure of a depleted deposit. Nature seals the channels after the metalliferous solutions have done their work. But nature does not destroy the conditions that produce a forest, and the lumbermen have come to realize that they are dealing with a renewable and continuing asset.

Before this was recognized as an economic possibility, before it was made certain that the lumbermen could become tree farmers and make money out of it, a first means of salvaging valuable material and thereby lessening the crime of waste of which all lumber producers had been guilty was resorted to. This was to manufacture paper. The pulp mill was substituted for the waste burner; at least, that is what happened at Bogalusa. The benefit was even more far-reaching; it extended into the logging operation, and made it possible to salvage the tops and limbs, and thus to clean up the debris that ordinarily strews the ground and gives to a freshly cut-over area an aspect of desolation and wanton destruction. The next lesson learned was that the pulp mill could profit by the spontaneous growth of young pine on favored cut-over lands when the trees were no more than 8 to 10 years old. Out of this grew concern for the protection of the new growth. Experience with the pulp mills brings swiftly into strong relief the entire problem of reforestation in its broader aspects.

The Bogalusa Paper Co., which is a subsidiary of the Great Southern Lumber Co., operates the largest pulp mill in the South, but it was not the pioneer in the production of paper from the resinous woods of the Southern States. The Yellow Pine Paper Co. experimented with the caustic soda process at Orange, Tex., about 1910. The initial efforts were not commercially success-

*Mr. Courtenay De Kalb, distinguished engineer, chemist and technical expert, is conspicuously qualified for the work of analyzing industrial operations and presenting their salient features. He has had practical experience as a mining engineer in various places in this and other countries, and has been an educator and voluminous writer on scientific matters. He practiced as a mining engineer in Western and Southern States; went on expeditions up the Amazon River and into Peru, Central America and Mexico; was manager of the San Fernando Mine, Durango, Mexico; exposed the Treasure Mine in California, and was president and general manager of the Pacific Smelting & Mining Co. at Guaymas, Mexico. He was professor of mining and metallurgy at the University of Missouri for four years and of Queen's University, Canada, for a similar period. He was trade commissioner of the United States Department of Commerce for the investigation of the mineral resources of Spain, Portugal and Morocco in 1919. He has written handbooks and studies on scientific subjects, besides contributing to periodicals on Latin-American affairs and international politics. He is an honorary member of the Geographical Society of Peru, a member of the American Institute of Mining and Metallurgical Engineers and of the American Chemical Society.

ful, but that company is now operating a plant that employs the sulphate method and yields satisfactory results.

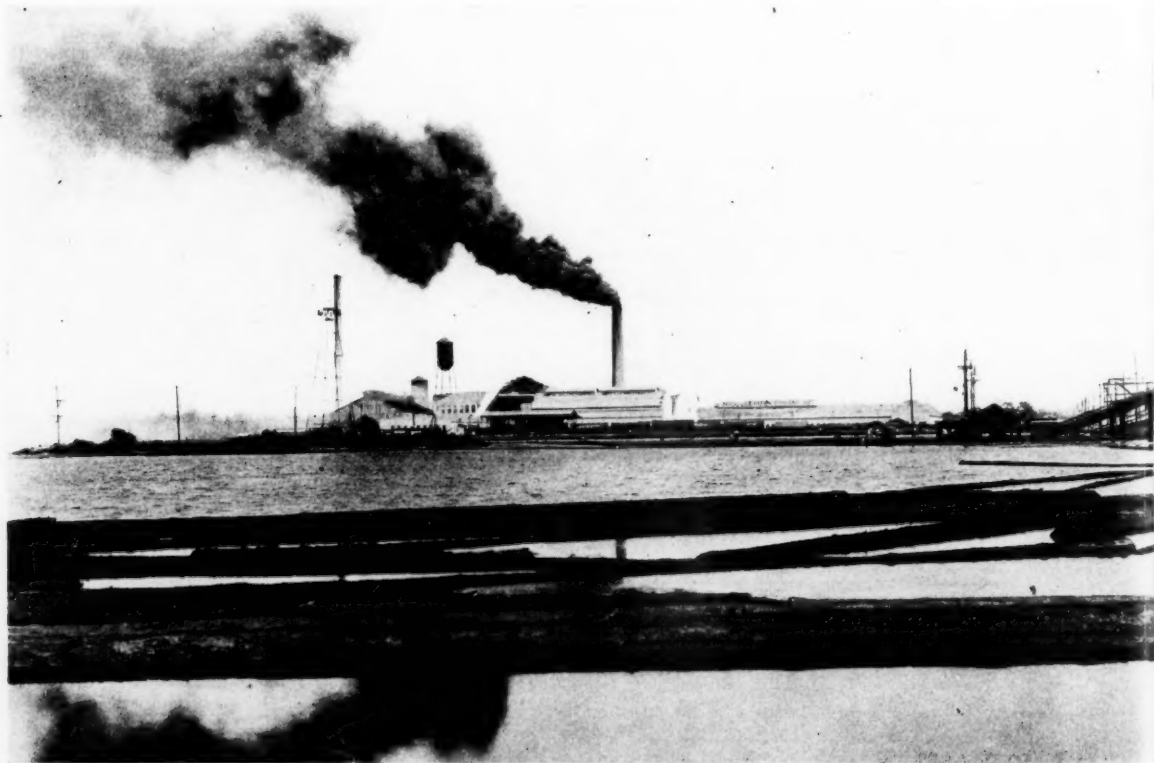
The first large-scale plant to introduce the sulphate process for pulping the Southern pine wood was erected by the Halifax Paper Co. at Roanoke Rapids, N. C., in 1908. With no precedents of successful operation to follow, it had to struggle against infinite difficulties of detail. The first unequivocal financial success with the process in this country was achieved by the Southern Paper Co. at Moss Point, Miss., with a plant which commenced operating in 1913. The pulp department was under the management of R. H. Laftman, who has since been placed in charge of the mill of the Bogalusa Paper Co. The latter plant, which now has a capacity of 65 tons of pulp per diem, with a total capacity of finished board of about 120 tons, began producing in 1918. With new equipment, now in process of installation, the capacity of finished board will be increased to 195 tons daily by May, 1921.

With the complete success of the Bogalusa Paper Co. in producing high-grade Kraft pulp on a large scale from the resinous woods of the South, duplicating the financial success of the Southern Paper Co., the era of Southern paper-making from the long-leaf, loblolly and other native species is fully inaugurated. These have dissipated completely and finally the doubts formerly expressed concerning the feasibility of pulping such material. Since the Bogalusa plant has finally established the successful routine of its sulphate pulp process it has made more money on the capital invested than the great million-foot sawmill and forests for its supply that largely furnish the paper mill with raw material.

Other plants in the South, outside of those already mentioned, which are successfully pursuing the same line of treatment are: The Atlantic Pulp & Paper Co., Savannah, Ga.; The Pine Tree Paper Co., Pine Tree, Ga.; The Chesapeake Corporation, West Point, Va.; The E-Z Opener Bag Co., Breithwaite, La.; a new 50-ton pulp mill now being built at Bastrop, La., by the Kansas City Fiber Box Co., and a 100-ton plant under construction at Hopewell, Va., by Humble & Ross. These are only the forerunners of many more. Pulp mills will become a feature of lumbering operations throughout the South, and the industry promises within the next few years to rival in magnitude the development now seen in Michigan, New York and New England. At

the present time only Kraft paper and board are manufactured from Southern pine. The resinous species do not lend themselves to the production of book papers as economically as other woods. Nevertheless, it is possible to manufacture bleached papers from pulp obtained by cooking coniferous wood by the sulphate process. This is a matter for future development. The addition of black gum, tupelo and other gum woods holds out a promise of successfully making good strong book papers in the South. An elaborate report on the utilization of wood wastes, made in 1914 by the firm of Arthur D. Little, Inc., of Boston for the Great Southern Lumber Co., showed that book papers made from the pine and gum woods on the lands of the company in Louisiana had an average bursting ratio of 0.39, a breaking length of 3825 meters and a folding strength of 6 double folds. This is superior to the standard specifications of the United States Government Printing Office for machine-finished No. 1 print paper. The tendency to harshness of the paper in which the long-leaf yellow pine pulp is used as an ingredient may be overcome by increasing the percentage of gum pulp. The gum trees, which are generally referred to as "hardwoods" among Southern lumbermen, grow abundantly along the lower lands bordering the water courses, and are self-seeders, readily renewing their growth. Dr. Little successfully produced in his experimental paper mill a great variety of Kraft papers, bleached and colored wrapping papers, bond paper, book papers and parchment, using raw materials from the Bogalusa area. No attempt, however, has yet been made by the Bogalusa Paper Co. to manufacture the highest-class papers. The mill yields Kraft pulp, mainly used in the production of container board, in conjunction with waste paper brought in from outside.

The shipment to Bogalusa of this waste paper has effected a great economy in the operation of the entire group of industries. A disadvantage keenly felt in lumbering operations arises from the fact that the cars for shipping the lumber have to come in empty, as there is usually no local demand to provide freight both ways. The New Orleans Great Northern Railroad, built in conjunction with the Great Southern Lumber Co.'s enterprise, now enjoys the benefit of freight in both directions on account of the large consumption of waste paper in the manufacture of container board. This, with the outgoing container board, yields a revenue amounting to 12 per cent of the total net earnings of that road.



GENERAL VIEW OF PLANT OF THE BOGALUSA PAPER CO., LOG POND IN THE FOREGROUND.

The crude material employed in the pulp mill at Bogalusa consists of the following: (1) Wood purchased from outside sources convenient to the line of the New Orleans Great Northern Railroad. Anything over 4 inches diameter is accepted, cut into 4-foot lengths. Wood larger than 10 inches is required to be split. (2) Pulp wood cut from the tops and limbs of trees in the logging operations of the company. The same limits as to diameter and length apply. The normal recovery of such material from these lands amounts to 8 cords per acre. (3) Slabs picked out from the burner-conveyor at the sawmill. This averages about 25 cords per 100,000 feet of finished lumber produced. (4) Pulp wood picked out from the cull-log splitters. This source of supply is variable as to quantity. Cull logs are those that have fallen in the woods and are unsuitable for saw logs. These are brought to the mill to be used for fuel, but after being cut into 2-foot lengths and split in the "splitter," a considerable proportion of good pulp wood can be sorted from them.

Other raw materials, in addition to the fuel for power, are "salt cake," which is neutral sodium sulphate (Na_2SO_4), quicklime (CaO), soda ash (Na_2CO_3) and alum (aluminum sulphate) and rosin for sizing. Waste paper constitutes a large item in the manufacture of container boards, the total consumed in the mill being about 70 tons per diem. The pulp production, which is now 65 tons, will be increased shortly to 90 tons per diem.

The demonstrated importance of the sulphate process as now perfected and applied to the pulping of Southern resinous woods makes it worth while to present a brief outline of the method employed at Bogalusa.

The slabs from the sawmill, the round and split pulp wood from the logging operations and the split cull logs, which have adherent bark, are delivered by a chain conveyor to the barking machine. This consists of a cylindrical tumbling frame set with the axis horizontal and rotated by rack and pinion. The cylinder is made up of channel beams bolted horizontally to the inside of the frame with a space of $1\frac{1}{2}$ inches between each beam, the channels being turned outward. The friction of the pieces of wood against each other in tumbling breaks and abrades the bark, which falls through the interstices between the channel beams. The machine is 60 feet long by 20 feet diameter. It requires 100 horse-power for its operation, and passes 15 cords of wood per hour. The barked wood meets a stream of clean mill waste on its way to the chippers. There are two disc chippers, each set with four knives that make $\frac{3}{4}$ -inch cuts. The capacity of each chipper is $7\frac{1}{2}$ cords per hour, consuming 100

horse-power. The chips pass through a screen to remove the dust and fines, the oversize then going to the rechipper, after which a final screen delivers the chips between $\frac{3}{16}$ inch and $\frac{3}{4}$ inch in size to the chip bins above the digesters. These chipping machines are manufactured by the Carthage Machine Co., Carthage, N. Y.

There are eight digesters in the mill, each having a capacity of 1320 cubic feet. These consist of vertical tanks, with a charge-hole at the top on which a cover is bolted down before beginning the process of cooking. The cooked pulp is discharged by live-steam pressure through 8-inch pipes to the diffusers. When the digester has received its charge of chips, it is flooded with solution through a solution pipe and then cooked by raising the temperature by steam coils placed between the tank and an outer shell. This is known as the "indirect" cooking process. Its advantage over direct cooking is the avoidance of overdilution of the liquor in the pulp. Maintenance of as high a specific gravity as possible in the solutions is important. Otherwise the volume of solutions to be handled and evaporated would become very great and increase the costs in tankage required in power and in steam used in the evaporators.

The solution used in digesting the chips has a specific gravity ranging from 1.73 to 1.8, and is composed of the following mixture, stated in terms of soda (Na_2O) in grams per liter: Caustic soda (NaOH), 81.22; sodium sulphide (Na_2S), 26.06; soda ash (Na_2CO_3), 21.7; salt cake (Na_2SO_4), 2.68; sodium sulphite (Na_2SO_3), 1.45, making a total soda 133 to 135 grams per liter. The total charge to a digester is 20,000 pounds of chips and 700 cubic feet of solution. The digesters in this mill were made by the M. W. Kellogg Company of New York.

Digestion continues in $3\frac{1}{2}$ -hour cycles, during which the caustic liquor dissolves the lignine from the wood and saponifies the rosin. At the same time a group of volatile compounds is distilled and drawn off from above the pulp. These compounds consist of turpentine, pine oil, wood alcohol (methyl spirits) and small quantities of ammonia and sulphydromethyl (CH_3SH). At the present time these are not refined at the Bogalusa plant, but a refining plant will shortly be installed, thus adding materially to the valuable by-products recovered. Experiments in by-product recovery have been made at Orange, Tex., but no by-product plants have been erected at any Southern mills as yet.

From the digesters the pulp is blown by steam through pipes to the diffusers, of which there are 12 in the mill, each tank having the same capacity as one digester, i. e., 1320 cubic feet. These tanks are placed in a circle around the concrete "stock chest,"



ROLLS OF FINISHED CONTAINER LINER AT PLANT OF BOGALUSA PAPER CO.

which receives the wet pulp, and from which it is delivered to the wet machines in the paper mill proper. The diffusers were manufactured by the Manitowoc Iron Works, Manitowoc, Wis. The function of the diffuser is to wash out the solution from the pulp. The diameter of the tank is 8½ feet, and its depth about 20 feet. When a charge has been blown into it, hot water is then drawn upon the surface, and this gradually diffuses downward through the mass of pulp, while the effluent, called the "black liquor," flows out through a pipe at the bottom. The "black liquor" contains a very large amount of organic material, in combination with sodium, in the form of organic salts, together with some unconsumed caustic soda, sodium sulphide and residual sulphate. It also contains the rosin in the form of resinate of soda, which is removable from the "black liquor" by decantation. This is not now recovered in salable form at Bogalusa or elsewhere, but plans are being made either to prepare the resinate of soda in suitable condition to be sold to soapmakers or to recover the rosin



WET MACHINES ROLLING PULP FROM THE WET STOCK FROM THE DIFFUSERS.

from the saponified scum. A convenient and economical method of doing this, as now proposed by Mr. Laftman, would be to displace the rosin and rosin oil from combination with the soda by the use of "niter cake," i. e., acid sodium sulphate (HNaSO_4), thereby regenerating neutral sodium sulphate ("salt cake") for use in the pulping process. The scum of resinate of soda can also be removed and distilled in vacuo to recover the rosin and rosin oils. During the war rosin oils obtained in this manner were employed by the Germans to supplement their urgent requirements of lubricating oils. They may also be fractionated by distillation to produce materials for making lacquers, paints and varnishes.

A portion of the "black liquor" coming from the diffusers is diverted back to the digesters for diluting the liquors used in cooking the pulp, the advantage in doing so being that its specific gravity is fairly high, and this reduces the burden upon the evaporators. The remainder of the "black liquor" passes into a Scott quadruple-effect evaporator, made by Ernest Scott & Co. of Fall River, Mass. Here the liquor is concentrated from 30° B. to 35° B. before going to the waste-heat evaporators. The Scott quadruple-effect apparatus evaporates 900,000 pounds of water in 24 hours, there being 3000 square feet of evaporating surface in each effect, the efficiency obtained being 3 pounds of water per pound of steam used.

To clarify the description of a process that in reality is quite simple, but which may seem complicated on account of the number of steps involved, it may be well to explain at this point that the basic principle is to cook the prepared chips in a solution made up of a mixture of various soda compounds, of which caustic soda and sodium sulphide are predominant; that this extracts the "lignine" in the form of a mixture of various organic salts of soda and saponifies the rosin, removing it as resinate of soda. That is what takes place in the digester, apart from the distillation from the cooking pulp of certain volatile compounds already described.

The diffuser is a scrubber in which the residual liquors are displaced from the pulp by water, these residual liquors constituting what is known in mill parlance as "black liquor." The pulp remaining after the displacement of the "black liquor" is essentially cellulose, to a large extent preserving the fibrous form

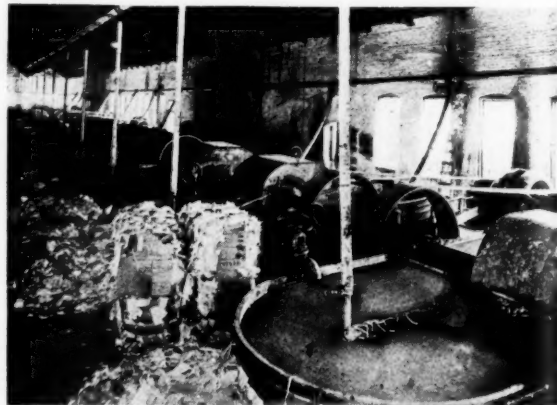
in which it was present in the original wood. Part of it is finely divided also, and this helps to give body to the dried pulp, while the fibrous particles, interlaced through the mass, impart toughness and strength.

Plain caustic soda has given poor results in cooking resinous woods. The sulphate process has so far been the only thoroughly successful method evolved for making a strong pulp, and the peculiarities of this process will now appear in following the course of the "black liquor" through the works. The object in this, as in any chemical process, is to recover as much as possible from the waste solutions that will tend to maintain a chemical balance. Actual regeneration of the solvent compounds is unattainable, but to a large extent there is a transformation of the soda compounds in the treatment of the "black liquor," and by making up the deficiency through adding a relatively small amount of fresh sodium sulphate (salt cake) the cycle is completed.

At the last stage where the "black liquor" was discussed it had just been concentrated by evaporation in the Scott quadruple-effect apparatus, and had been sent to the waste-heat evaporators, which consist of long, shallow, enclosed pans with a series of vertical discs mounted on a train of axles revolving so as to dip into the solution and then expose the wetted disc to the direct heat. The large area thus presented to the current of heated gases promotes rapid evaporation. The apparatus here used is being altered from a series of plain discs to trains of thin-bladed screws with 3-inch spaces between the successive whorls. The screw form not only presents an equal superficial area to the heated gases, but keeps the solution in motion, and the result is to increase the efficiency.

The "black liquor" leaves the waste-heat evaporators with greatly increased specific gravity. It discharges by gravity into a final evaporator called an incinerator, which is nothing more than a revolving cylindrical furnace 21½ feet long by 5½ feet diameter inside the lining. There is a refractory lining inside the steel shell consisting of fire-brick purchased from the Laclede-Christy Clay Products Co. of St. Louis, Mo., and from the Harbison-Walker Refractories Co. of Pittsburgh, Pa. These are 9-inch brick, arch-form. The incinerator is driven by a 5-horse-power motor at a speed of one revolution in 1½ minutes. The thick solution that enters the incinerator leaves it as a sticky residue that is called "black ash," containing all the sodium compounds that were present in the "black liquor," which includes a large amount of carbon compounds.

The indeterminate mixture of the sodium compounds with vegetable acids, a group of organic compounds that is very complex, found in the "black ash," is readily broken up by heat, the dissociated carbon compounds then constituting them becoming available as combustible material. The aggregate amount of this



VIEW IN BEATER-ROOM SHOWING BEATERS IN OPERATION.

is very large, so that it assumes importance as a source of heat. In the process of making pulp approximately 4951 pounds of bone-dry wood or 8250 pounds of green wood make one ton of pulp. This leaves 2950 pounds of other substances to be accounted for in the process. The resinous substances may be about five gallons per ton of pulp produced. The bulk of the extra weight of wood consumed in making one ton of dry pulp consists

of the complicated mixture of organic substances mentioned, which together constitute what is called lignine, and this is the complex mixture of organic compounds of soda that appears in the "black ash," not counting the rosin, rosin oils and alcoholic distillates that are removed from the digester and the diffuser.

The "black ash," therefore, contains in itself sufficient combustible material to carry through the next step of "smelting," and the heat is so intense that the hot gases escaping are used for evaporating the "black liquor" in the incinerator and in the waste-heat apparatus. It is also possible to utilize these hot gases for generating steam in water-tube boilers.

The requisite amount of salt cake (Na_2SO_4) is mixed with the "black ash," based on an actual consumption of 400 pounds of fresh salt cake per ton of dry pulp produced. The mixture is then fused in the smelting furnace. This furnace is merely a fire-brick chamber of square section, bound by buckstays and rods, and provided with a sloping bottom to the air nozzles that enter like water-cooled tuyeres on one side. The chamber is lined with sawn tale blocks, the object being to provide a neutral refractory material that will not be corroded by reaction with the soda compounds.

It is a matter of possible interest to producers of tale to know that one difficulty experienced in maintaining a stable lining is the fact that the tale blocks expand more in the direction of the grain than across the grain. A homogeneous, amorphous tale block would be highly desirable.

In the smelting furnace the most important reaction is the reduction of a large part of the salt cake to sodium sulphide (Na_2S). Sodium sulphite (Na_2SO_3) is also formed to some extent, as well as a large amount of sodium carbonate. The part played by the sodium sulphide in the "cooking" reactions in pulping the wood is a disputed question that may be left to the specialists. It undergoes changes of some sort, as is clear from the circumstance that it does not build up in the successive cycles of the solutions through the mill as it would if it were inert. The process of sulphate pulping does not go on without the presence of sodium sulphide (Na_2S) in the solutions. It is highly probable that it is not a simple sulphide, but may be present as a mixture of sodium polysulphides. It is thought that the sodium sulphide reacts with the wood alcohol to form the sulphydromethyl (CH_3SH) that is evolved with the distillates from the digester.

The fused mass from the "smelter" is drawn off to a dissolving tank, where the solution is made up with weak liquor from the caustic tank to be described later. The color of the solution that results gives it the name of "green liquor," which consists of sodium carbonate, sodium sulphide, sodium sulphite, sodium sulphate and a small amount of caustic soda. In order to prepare this to do its work as a solvent in the digester it is necessary to convert the excess of sodium carbonate into caustic soda, which is done by bringing the "green liquor" into contact with quicklime. There is a simple replacement of carbonic acid, forming insoluble lime carbonate, which settles to the bottom of the tank, while caustic soda is formed from the sodium carbonate. The amount of quicklime thus consumed amounts to 600 pounds per ton of finished dry pulp. The reaction is called "causticizing," and takes place in the caustic tank, where the solution is agitated by impellers, while the lime is placed in an iron cage near the top, submerged in the solution. The "lime sludge" (lime carbonate) is allowed to settle, and the clear caustic liquor, leaving the composition previously stated, is decanted and pumped to the digester for cooking the chips.

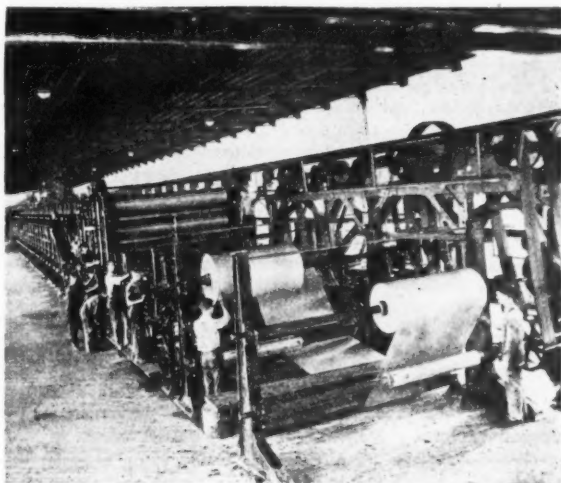
The sludge is diluted and decanted twice, the weak solutions being used for dissolving the smelted soda mixture. The lime sludge is then drawn into Kelly filter presses, made by Elie E. Lungwitz, New York. Under an air pressure of 20 pounds per square inch the cake is first washed with water, then brought down to about 50 per cent moisture, and is finally discharged to waste. This finely divided lime-carbonate would be an excellent material to use on the "sour" lands of Louisiana to neutralize the acidity.

The actual paper-making from the wet pulp is relatively simple as compared with the preparation and management of the solutions. The wet pulp is rolled into sheets by five "wet machines," one, known as the Rogers machine, being made by the Glens Falls Machine Co., Glens Falls, N. Y., and four by the Valley Iron Works, at Appleton, Wis.

The mixture of fresh pulp with waste paper is made in a bat-

tery of 16 machines called "beaters," also manufactured by the Valley Iron Works. These are shallow elliptical tanks, divided by a partition into an elliptical course, around which the pulp flows under the impulse of a rotary mechanism called a beater-roll, placed on one side channel. The beater-roll is provided with a series of knives, and beneath it, on the bottom of the channel in the tank, is a plate also set with knives. The roll is adjustable as to distance from the bottom knife plate. Thus the beater-roll disintegrates and mixes the two classes of material fed to it at the same time that it causes the mix to flow around the elliptical course in the tank. The dry weight of one charge to each beater is 1500 pounds. The Bogalusa Paper Co. is installing immediately 11 more beaters, and by a change in the method of discharging, Mr. Laftman is greatly increasing the capacity of those now in the plant.

From the beaters the pulp is rolled and pressed into board by two six-cylinder machines, with 79 driers each, trimming, respectively, 112 and 106 inches, the former having a capacity of 70 tons and the latter 65 tons per 24 hours. Each machine is provided with four Jordan engines for the final "refining" of the pulp and paper stock. The third machine is a six-cylinder board machine trimming to 96 inches, followed by 94 driers, and having a capacity of 60 tons per diem. This will be supplied with four Jordan refining engines. The three machines mentioned above, constituting one of the most costly single features of the



SIX-CYLINDER MACHINES ROLLING BOARD INTO FINISHED FORM, FOLLOWED BY MACHINE WITH 79 DRYING CYLINDERS.

total equipment, were furnished by Black & Clowson of Hamilton, O. The blankets employed on these machines and throughout the train of drying rolls are of pure wool, furnished chiefly by Huyek & Son, Albany, N. Y., although large amounts of the felt have been supplied by Draper Bros. & Co., Canton, Mass.; The Albany Felt Co., Albany, N. Y., and Huller & Benninghof, Hamilton, O. The stock of these felts carried in the mill of the Bogalusa Paper Co. has a value of over \$10,000.

The alum mentioned as one of the raw materials is used to the extent of 3 per cent in the manufacture of the container-liner for setting the size and color. The mixture for making the board or container-liner consists of 60 per cent waste paper and 40 per cent kraft-pulp from local woods. Power is developed with waste material from the saw-mill, cull-logs and bark, generating steam in ten 250-horse-power and two 200-horse-power boilers made by Walsh & Weidner, Chattanooga, Tenn. High-speed engines, manufactured by Crocker & Wheeler, drive three 850 K. V. A. and two 550 K. V. A. generators, respectively, and one 2000 K. W. mixed pressure turbine generator from the General Electric Co. is just being installed. The entire plant employs 500 operatives.

The container-liner manufactured at the Bogalusa plant is produced in three grades, respectively, 16, 18 and 29 one-thousandths of an inch in thickness. The corresponding weights are 70 to 73 pounds per 1000 square feet for the sixteen one thousandths of an inch board, 78 pounds for the eighteen one thousandths of an inch and 110 pounds for the twenty-nine

one thousandths of an inch stock. The Mullen bursting test shows respective strengths per square inch of 75 to 100 pounds for the thinnest board, 110 pounds for the medium and 150 pounds for the thickest board. The test for waterproof quality shows four hours required for the water to penetrate the standard cup.

For the past year the range of price has been from \$130 to \$180 per ton f. o. b. mill, and the output has averaged round about 120 tons of container-liner daily.

Under the forestry policy now adopted by the Great Southern Lumber Co. the supply of raw material for the pulp mill, instead of decreasing, will henceforward increase to a maximum estimated to be more than sufficient to admit of enlarging the paper mill to a total capacity of nearly 600 tons of all kinds of paper products per diem. Accordingly four new units as a separate plant have been authorized by the board of directors of the Great Southern Lumber Co. and the Bogalusa Paper Co. This will be erected as an entirely distinct pulp and paper mill on the north side of the town of Bogalusa, nearly a mile distant from the old plant. Water for the new paper mill will have to be pumped from Pearl River, 1½ miles away, as the flow of Bogalusa is insufficient at low stage. The reforestation project contemplates bringing up the paper output ultimately to 600 tons a day. At the present time 50 per cent of the tonnage of the New Orleans Great Northern Railroad, from New Orleans through Bogalusa to Jackson, Miss., which is one of the Great Southern enterprises, consists of lumber. It is the purpose of the company to provide an equal tonnage of paper products. Consequently the future earning power of the Great Southern group of enterprises is based on a continuous output of pulpwood from various sources, all of which in the end rest for their permanency upon the results of reforestation. There will be renewal of timber on the lands of the company so that the production of lumber may never cease, but the future production of paper would be sufficient to earn dividends on the invested capital independently of any lumber output.

Not only will the company draw from its own lands to feed its paper mills, but reforestation by small landowners is being encouraged through the purchase by the Bogalusa Paper Co. of pulpwood throughout the area reached by its co-ordinated railroad system. The new plant, which has now been authorized, will involve the further investment of \$8,000,000. The preparation of the plans for these additions will commence within the next 60 days. In conjunction with the new paper mill, which will produce all classes of paper except newsprint, there will be erected a group of by-product plants which will create at this point a chemical industry of great importance.

The chief lesson to be drawn from the plant and policy of this progressive concern is that of permanency of industry based upon Southern pine forests. One of the most serious problems that has had to be faced in the pine belt of the South has been that of the cut-over lands. They have remained as costly to clear as the virgin forest, with almost nothing but a little pine stump rosin to repay the cost. In many cases they are poorly adapted to agriculture, though ordained by nature to produce long leaf and loblolly pine trees to perfection. The methods pursued by the Great Southern Lumber Co. offer a practical solution of the problem of the cut-over lands. In the old sense of a devastated region, practically useless and deserted, there will here be no "cut-over" lands. The ground will spring into verdure immediately behind the logging operation and soon will be producing pulpwood as valuable as the original forest.

What has been done at Bogalusa can be repeated throughout the pine districts of the South, providing steady employment for thousands of people and offering a basis for remunerative investment of capital in vast areas that otherwise would be abandoned.

Fifty Years of Success in Rubber Manufacture.

The shriek of whistles, the clang of bells and the usual din of merrymaking at midnight on December 31 meant more to Akron, O., than the birth of another year—it marked the golden anniversary of the B. F. Goodrich Rubber Co., the pioneer rubber factory of the "Rubber City." Fifty years ago that day the company was incorporated by Dr. Benjamin Franklin Goodrich and 19 Akron men, who "risked" \$1000 each in the new venture.

The growth of Akron during the past two decades has been caused directly by the rapid expansion of the rubber industry.

Twenty years ago, when both the rubber and automobile industries were still in their infancy, Akron only had a population of 47,000. Now it has nearly 250,000. The Goodrich is said to be the oldest large company in the rubber industry.

Although Dr. Goodrich's work in developing rubber products has figured prominently in the growth of the automobile industry, he did not live to see a "horseless carriage." He died August 3, 1888. He was a physician, but he acquired a small rubber factory at Hastings-on-the-Hudson in a real-estate deal. As a result of a quest for financial help he went to Akron and located in a small two-story brick building with 25 employees. This little factory of 50 years ago has grown until today it comprises 63 buildings of brick and steel, covering 110 acres.

The first product the Goodrich company ever made was fire hose. Article after article was then added to its line until today approximately 30,000 rubber products are manufactured. After fire hose and mechanical goods, Goodrich developed pneumatic tires for bicycles, although it previously perfected the solid rubber tire for carriages. Then, in 1896, the company produced the clincher type pneumatic tires for automobiles. Next came the cord tire, which was evolved from the Palmer bicycle tire that utilized parallel threads or cords in place of woven fabric. While the patents were owned by J. M. Palmer of England, Goodrich manufactured under them exclusively in the United States for years. Later, when Palmer sold his patents to a rubber company in Silvertown, England, the American rights under these patents were acquired by the Goodrich company in 1912.

In the golden anniversary message to employees and customers President B. G. Work said: "We feel a thrill of pride as we look back over the years and realize the part we have played in the development of the rubber industry."

The Goodrich company is commemorating the anniversary by publishing a 48-page book called the "Golden Year of Goodrich," which history was written by Wilbur D. Nesbit and illustrated by W. B. Benda, the Polish-American painter.

Virginia Tobacco Men Vote to Cut Production One-Half.

Danville, Va., January 10—[Special.]—Resolutions urging a 50 per cent cut in next season's tobacco crop were adopted at a meeting here on Friday of the Danville Tobacco Association. A cut of one-third of the present crop was not considered sufficient. The resolution pointed out the duty of the association to impress on growers the urgent necessity for curtailment in tobacco production and the raising of sufficient food and feedstuffs for home consumption.

J. H. Warren, president of the Virginia Tobacco Growers' Association, delivered an address and stated his belief that the farmers would meet the trade association in curtailing the crop one-half. E. G. Mosley, a large dealer, said that previous similar advice given to farmers had invariably been disregarded, and that larger production had always followed pleas for a smaller crop.

The resolution cites the fact that total production of tobacco in the United States in 1920 was between 550,000,000 and 600,000,000 pounds, compared with 470,000,000 in 1919 and 450,000,000 in 1918. The average price paid for the 1920 crop will be 20 to 23 cents a pound, compared with 50 cents in 1919 and 35 cents in 1918. Even with the adoption of the recommended curtailment plan, it is predicted that the price average for 1921 will be but little, if any, increase over 1920.

Takings of Gulf Pipe Line Co. Announced.

Oklahoma City, Okla., January 10—[Special.]—The Gulf Pipe Line Co. has notified Oklahoma interests having production in Texas served by the Gulf that it will take only 50 per cent of the oil after December 28, 1920, but will store the other 50 per cent on terms as follows:

"The oil received for storage shall be subject to deductions, rules of measurement and title requirements the same as provided on purchase oil. The Gulf Pipe Line Co. will make charges on such stored oil at the rate of 3 cents per barrel per month, and when such oil ultimately is not purchased by the company, but is delivered on the order of the owner, then the owner or his assigns shall pay handling and transportation charges, as provided in the regular tariff of the Gulf Pipe Line Co."

Large Phosphate and Fertilizer Factory Placed in Operation at Savannah

THOROUGHLY MODERN PLANT, EQUIPPED WITH LATEST LABOR-
SAVING MACHINERY,
HAS CAPACITY 300 TONS DAILY OF ACID PHOSPHATE.

[Special Correspondence Manufacturers Record.]

Savannah, Ga., January 17.

Since last season there has been constructed in Savannah one of the largest combined acid phosphate and complete fertilizer factory of modern design in this country. When the old plant of the Southern Fertilizer & Chemical Co., located on Hutchinson Island, burned in February, 1919, this company made a long and close study of the developments in the manufacture of fertilizers with the view to building the best possible plant. After two months of investigation it contracted with the Pratt Engineering & Machine Co., Atlanta, for its new plant, which is now complete and in operation. It is of steel fireproof construction throughout, and is equipped with bridge cranes of 80-foot span, fitted with three and four-yard grab buckets.

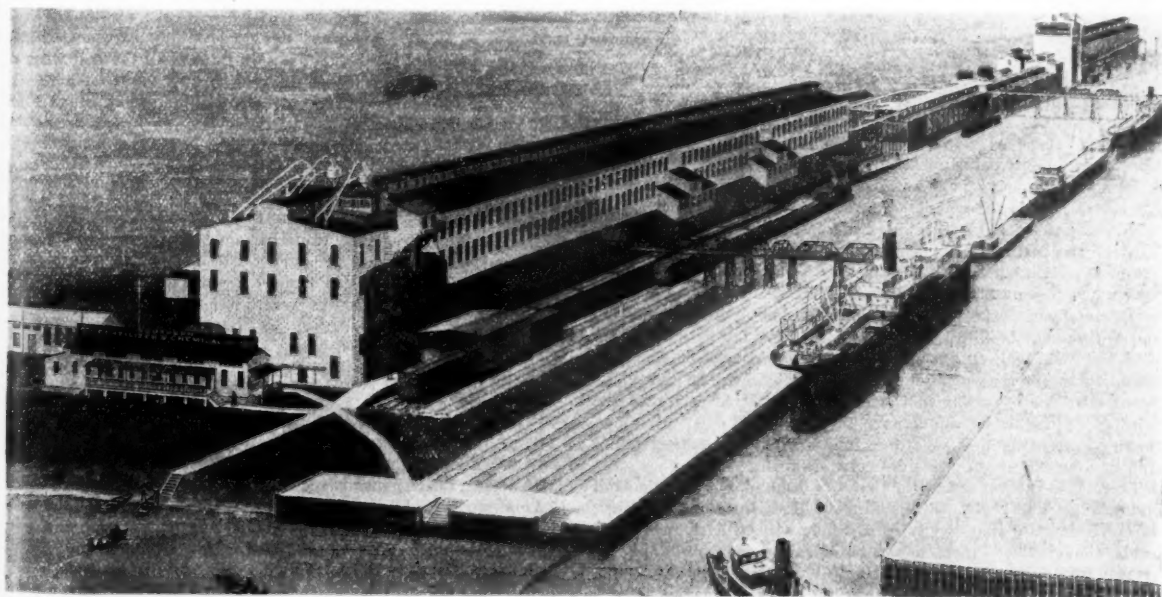
The unloading of phosphate rock, ammoniates and potashes is all handled by machinery with a minimum of labor, rock being stored in steel bins, the other materials being conveyed by the cranes to the points desired. The sulphuric acid is pumped from the company's large sulphuric-acid plant, located on the same site. The rock, after being ground, is separated and conveyed by the air system and finally delivered into smaller bins in the roof of the building. From these bins it is fed through suitable devices into the mixer, where it combines with the acid. This mixer is located immediately over a large steel silo. When one silo is filled the mixer, which is on a truck, is transferred to another silo, and so on until all four of the silos are filled. An improved exhaust and condenser system removes the fumes from the mixer and the silos and disposes of them so effectively that no leak is noticeable. After the acid phosphate has remained in the silo for a few hours the cover of the silo is removed by the crane and the phosphate is then excavated by the grab bucket and carried by the crane to the storage pile. A silo of 75 tons capacity is emptied in 45 minutes. The silo, when empty, is then ready for refilling. The acid phosphate manufacturing capacity is approximately 300 tons a day, and the storage capacity for this material is approximately 35,000 tons. The capacity of this plant is rated at 100,000 tons of acid phosphate yearly.

The acid phosphate, ammoniates and potashes are removed from storage by the cranes and dumped into rows of hoppers of steel

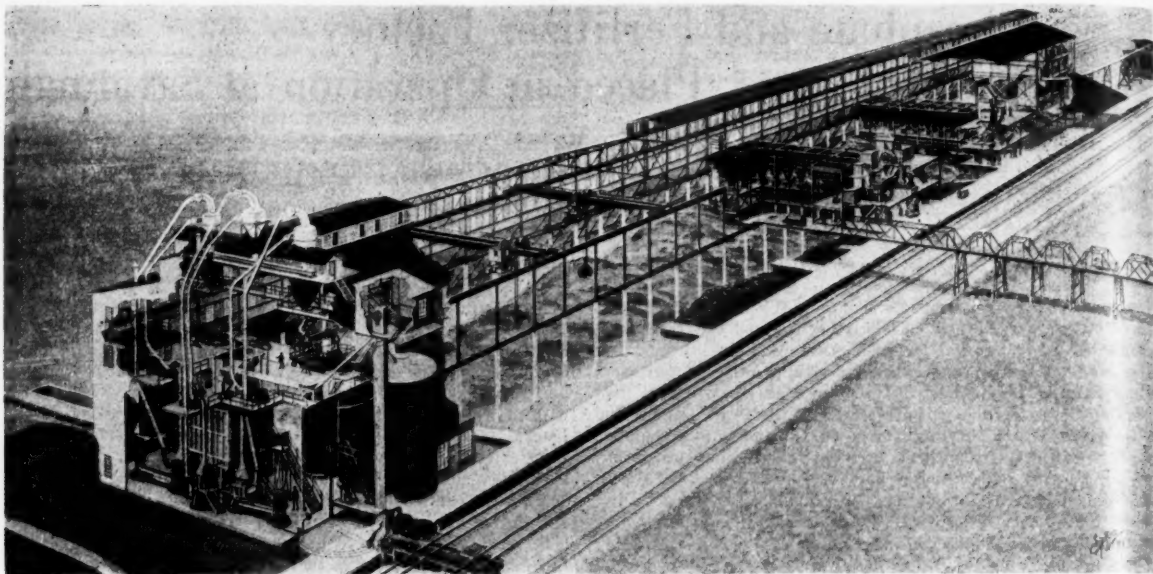
construction located crossways the building. These feed hoppers discharge into weighing hoppers, which, in turn, discharge onto a belt conveyor, one for each row of hoppers. Each belt delivers into its elevator, which, in turn, feeds one of the screening, mixing and shipping machines. There are three such machines for ammoniated goods. In addition, there is one machine for sacking acid phosphate and one for loading bulk acid phosphate. The bulk acid phosphate machine delivers the material into the car, and it is piled by a car-loader. The sacked goods are handled by electric trucks into the cars, which are placed along the shipping platform extending 740 feet the length of the building. One of the ammoniate machines is arranged for manufacturing base goods. The base goods from this machine are returned by the cranes to storage for use when needed. The company has erected permanent bins for storing a large tonnage of complete fertilizers to facilitate quick shipment in the best mechanical conditions during the heavy shipping season. The total storage capacity of the plant is 52,000 tons.

The Southern Fertilizer & Chemical Co., in addition to operating this plant, has a plant in Philadelphia, in which it manufactures an acidulated base goods, and also has a plant at St. Marys, Ga., for manufacturing fish scrap. Much of the product of both of these plants is brought to its plant at Savannah. The acidulated base brought by boat is unloaded at its wharf alongside the plant, being hoisted by steam and dumped into cars on a tramway at an upper level. These cars are then run into the building and the acidulated base dumped into storage where the cranes can reach it. The fish scrap from the St. Marys plant is brought in railroad cars into a special department of the Savannah plant, equipped for the elimination of unpleasant odors during the handling of the fish scrap to make base goods. This product is also dumped into the main storage building where the cranes can reach it. The nitrate of soda is stored in a separate building, convenient of access, and is transferred by electric trucks as required for mixing and shipping.

The plant is completely equipped with necessary auxiliaries, such as chemical laboratory, bag printing presses, repair shops, storage station and garage for electric trucks and two railroad



GENERAL VIEW OF PLANT OF SOUTHERN FERTILIZER & CHEMICAL CO., SAVANNAH, GA.



X-RAY PHOTO OF SOUTHERN FERTILIZER & CHEMICAL CO.'S PLANT, SHOWING INTERIOR EQUIPMENT AND METHOD OF OPERATION.

track scales, together with a full complement of railroad tracks, which will hold approximately 75 cars.

The entire plant is provided with the latest devices to insure the safety of its operators and the most accurate processing and handling of materials and finished products, and is equipped through-

out with ample facilities for illumination, so that operations under any condition can be carried on without disadvantage.

Although the plant is of fireproof construction, it is provided with fire-protection facilities according to standards of the National Board of Fire Underwriters.

Price Reduction on Crude From Somerset Field May Result in General Readjustment of Operations.

Austin, Tex., January 17.—[Special.]—What may be the beginning of a general break in crude-oil prices is reported from the Somerset field, near San Antonio, where the Grayburg Oil Co. has posted a notice of reduction of the price from \$3 to \$2.50 a barrel. It is expected that a reduction of the price of light crude in the North Central field from \$3.25 to \$2.75 a barrel will be announced by the larger companies soon.

It is asserted that some difficulty is being experienced in finding a market for fuel oil, and this is given as one cause of the reduction in price of the unrefined product. Another factor which is growing in importance is the heavy importation to Texas of Mexican fuel oil.

One of the first effects of the new cut is to revive talk of reducing the cost of drilling wells in the Somerset field. Six-inch casing is said to be selling at around \$1.10 a foot, whereas some years ago it sold as low as 68 cents a foot. Other supplies are priced accordingly, and unskilled labor, which formerly received \$2.50 a day, is being paid now \$4 a day, which is \$1 less than immediately after the war.

New locations are not being made in Somerset at this time. Most of the companies are completing the wells already started, but are holding up new development. Some of the newer companies are continuing their operations, but a general letdown in new development is expected all along the line. Wells completed and with pump installed are said to cost around \$10,000 for a 1500-foot well, and, with a low price of crude, companies are hesitating to invest that amount of money. Not less than five different concerns operating in Somerset reported recently that the price of drilling wells would have to be brought down all along the line to meet the new conditions, and intimated that they would stop drilling unless the price did come down.

There is a general optimism that the demand for both fuel oil and gasoline will revive within 60 to 90 days, but some, at least, do not anticipate that the price of crude will go back to the old levels, though they expect to see an elevation in prices from the present level. The larger consumers of fuel oil in San Antonio, it is claimed, are using Mexican fuel, and the chief market for the Somerset fuel oil is the small factories and industries, and it is

believed that most of these industries will become more active within a short time.

Cost of pumping the wells in Somerset may also be forced down as a result of the low price of crude, making a general all-around readjustment of prices.

Weekly Coal Report.

The weekly report of the United States Geological Survey estimates the total output of bituminous coal for the week ended January 8 (including lignite and coal coke) at 11,083,000 net tons. The production of anthracite coal for the week is estimated at 1,793,000 net tons. The output of beehive coke for the week is estimated at 272,000 net tons. The tidewater movement of coal increased, reaching the highest weekly total since the last week of October, 1,261,000 tons being dumped over the piers during the week. The all-rail movement to New England continued high, 4993 cars being moved.

The Cotton Movement.

In his report of January 14, 1921, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 167 days of the season was 6,451,702 bales, a decrease from the same period last year of 1,793,806 bales. The exports were 2,627,467 bales, a decrease of 668,024 bales. The takings by Northern spinners were 715,399 bales, a decrease of 938,867 bales; by Southern spinners, 1,729,505 bales, a decrease of 916,454 bales.

A Good One at All Times.

[Tifton Topics, published by the Tifton Board of Trade.]

Of all the trade journals received and kept on file in this office, the one we consider the best of all is the old and reliable and always faithful MANUFACTURERS RECORD. It is read and consulted for valuable and reliable information more than all others combined. The editorials are able and forceful, and it is a pity in these times of soap-box orators and wildcaters, that it could not be placed in the hands of every Georgian who can read.

Open-Shop Movement Pledged Support by National Conference of State Manufacturers' Associations

REPRESENTATIVES FROM 22 STATES URGE CONTROL OF IMMIGRATION AND RECOMMEND ABROGATION OF NATIONAL AGREEMENTS NOW EXISTING BETWEEN RAILROAD ADMINISTRATION AND BROTHERHOODS.

[Special Correspondence Manufacturers Record.]

Chicago, Ill., January 12.

Representatives of manufacturers' associations from 22 States attending the national conference of State Manufacturers' Associations here pledged solid support to the open-shop movement, urged that a constructive policy of controlled immigration be adopted and denounced the perpetuation of national agreements between Railroad Brotherhoods and the Railroad Administration as inimical to the welfare of manufacturing industries.

The keynote around which most of the discussions engaged was the open-shop movement. Speaker after speaker urged the necessity of the open shop as vital to the interests of manufacturers, as well as of the whole people of the United States. Resolutions pledging support to the open-shop movement were adopted, as follows:

"It is recognized as fundamental in this country that all law-abiding citizens or residents thereof have the right to work when they please, for whom they please and on whatever terms are mutually agreed upon between employer and employee, and without interference or discrimination upon the part of others.

"We hereby express our purpose to support these fundamental principles of the American plan of employment by the maintenance of the open shop.

"We urge upon our members to secure by discussion and active support of workers, merchants, bankers and professional men, and all other elements of their respective communities, in favor of American ideals and the open shop."

The question was brought up as to whether or not the members of the association were bound to stand by the resolution if it were passed. William Butterworth of the Deere & Moline Company of Moline, Ill., president of the Illinois Manufacturers' Association, stated that the members were not bound to adhere to any resolution made by the association. He stated that all members realized that situations in the various plants differed greatly, and the association could not afford to tell its members what it should do or what it should not do.

In the opening address of the conference Mr. Butterworth discussed the labor situation as a whole, laying particular stress upon the issue between the railway carriers and the brotherhoods over the matter of national boards of adjustment and also upon the open shop.

"If the attempt of the Railroad Brotherhoods to impose national boards of adjustment upon the carriers is successful, the effect upon industry will be all-enveloping," he said. "It will mean the closed shop for all the railroads. To the manufacturing interests this means faulty and uncertain transportation methods, made possible by lack of morale prevalent under Government ownership."

Mr. Butterworth said if the Railroad Brotherhoods fasten the closed shop on the railroads, it is possible that the closed shop will be fastened on all branches of industry. "What is more logical than an attempt to gradually force the un-American policy upon every branch of industry in the United States if the brotherhoods force the closed shop on the carrier," he said. From the wording of the law it would seem plain that the United States Railway Labor Board is without authority to impose national boards of adjustment upon the railroads, but, in my judgment, there is still a serious situation confronting the railroads.

"It is important and necessary that the manufacturers and other shippers forcefully indicate the effects upon them of the organization of the proposed Board of Adjustment and continuation of agreement made by the United States Railway Administration and organized labor and acquaint the public with the facts, for it is the public which also suffers.

"The open-shop movement, well named the American idea, con-

tinues to progress in every section of the country, and it is probable that through the agitation of the Railroad Brotherhoods the public will at last grasp the question's significance as it relates to the economic lives of every inhabitant of the United States.

"The open shop has been approved by the United States Chamber of Commerce overwhelmingly; also by the National Grange of practically 1,000,000 farmers; also by the American Bankers' Association; also by the business interests of 240 cities. It means liberty of action on the part of both the employer and the employee."

W. H. Stackhouse of French & Hecht, Springfield, Ohio, speaking on the subject of "Industrial Freedom," also urged the adoption of the open shop and denounced the plan of the brotherhoods to impose national boards of adjustment on the railroads.

Resolutions urging the abolition of national agreements were adopted.

Charles Nagel of St. Louis, former Secretary of Commerce, and W. S. Bennett, who formerly served on the House Committee on Immigration, spoke on the subject of immigration in relation to the country's needs. They both asserted that manufacturers might look forward to a better distribution of immigration during the coming Administration. Both urged the encouragement of immigration, but both recommended that the United States should insist upon having examinations of immigrants made on the other side for our own protection.

Charles Piez of the Link-Belt Company of Chicago, in his talk on the "Baneful Influence of National Adjustment Boards From the Public's Standpoint," said, in part: "Whenever the question of wages has been taken before the adjustment board, whether national or local, the sole question of these boards has been 'How much has the cost of living gone up?' and then the problem was to add the determined percentage of increase to the wage, whether the worker earned it or not, irrespective of whether the public suffered or not, irrespective of whether the rest of the public were equally advanced in their compensation or not.

"Thus, labor itself has become class conscious. Every man in the organizations felt that he was entitled to a return based on the cost of living, not on the cost of living that prevailed four or five years ago, but on an ascending scale, and as far as each individual of the organized mass was concerned he didn't give a rap what happened to the rest as long as he got his.

"I believe the labor problem is a problem between the men you employ and yourselves as employers, and it ought to be maintained there. I think we ought to resent every effort to nationalize adjustments. It is to our interest and to the interest of the public."

George M. Reynolds, chairman of the board, Continental and Commercial National Bank, spoke on the present financial system. He said, in part:

"As individuals and as a nation and a Government we have spent too much money. The watchword has been waste and careless use of money. The remedy is now to work and save.

"I think if the men who are in business and in high places will familiarize themselves with conditions and lead the way, we are going to find that the great masses of the people want to be led the right way, to do the right thing."

Alabama Manufacturers Meeting This Week.

Birmingham, Ala., January 17—[Special.]—Many subjects of great concern will be considered at the annual meeting of the Alabama Manufacturers' Association, to be held in Birmingham this week, this to be the first convention of the organization which in a year's time has a membership that includes a very large percentage of the manufacturing interests of the State. L. Sevier is president of the association.

[From the Tampa (Fla.) Morning Tribune.]

BLAMES DEPRESSION ON RESERVE BOARD.

Houston and Governor Harding Criticised—Richard H. Edmonds, Editor Manufacturers Record, Is in Tampa.

Action of the Federal Reserve Board, Governor Harding and Secretary Houston were largely blamed for present almost universal business depression in the United States in an interview last night by Richard H. Edmonds of Baltimore, editor of the MANUFACTURERS RECORD.

In discussing the recent sudden depression in industry Mr. Edmonds said:

"The decline in the last four months in the value of farm products is nearly \$8,000,000,000. The decline in merchandise and manufacturing interests is equally as heavy as the loss to the farmers. It is costing the country an amount equal to the cost of the entire war, and is the most unnecessary and unjustifiable the country has ever had to endure. It was brought about almost entirely by the determined policy of the Federal Reserve Board to break down the prices of commodities and securities under the delusion that low prices would be a benefit to the country, whereas low prices always mean poverty and stagnation. Rising prices always mean expansion and prosperity. We had four years of inflation during the war, and the only sensible or safe way to deflate prices was to take equally as long as it took to inflate prices. When the Reserve Board decided a year ago to curtail credits and urged all banks through the United States to restrict credit drastically, it was absolutely certain that we should have chaos in business unless the Reserve Board could be induced to change its plans. Immediately upon the announcement that it intended to restrict credits and deflate prices I began the most aggressive fight I could make against such methods, and every week predicted they would bring about a complete collapse of all business.

"The depression in this country has largely helped intensity that in Europe. Secretary Houston, a member of the Federal Reserve Board, during the fall constantly announced that prices ought to decline and that the Government would do nothing to prevent the fall in prices of grain, cotton and other commodities. Any man who had any faith in the power of the Treasury Department to carry out Secretary Houston's threat would have been a fool to buy anything. The result was that cotton mills in this country and Europe stopped buying cotton, waiting to see how low it would go. Factories stopped buying raw materials and individuals stopped buying everything which they could do without. The result is over 2,000,000 idle men in this country vainly seeking work. Farmers, especially cotton, wheat and corn raisers, are in dire poverty. The price of cotton today is less than half the cost of production.

"Twelve months ago every industry in the country was crowded. There was an abundance of work for every man who wanted to work, and for the first time in history farmers and industrial workers were getting fair pay for their work. Never before had farmers or laborers got adequate compensation. High wages are a blessing to the country, not a curse.

"Until Secretary Houston and Governor Harding of the Federal Reserve Board are eliminated from power there can be no great advance in prosperity. Fortunately, Secretary Houston will lose his job early in March, and Governor Harding would render the country an immeasurable service if at that time he would resign, for his term does not expire for some time yet. The Federal Reserve banking system has great powers for good as well as for evil. As now organized, seven men have the greatest power ever given by law to any equal number of men in the world's history, for they absolutely dominate the financial interests of the country, and that means every business activity. No seven men on earth ought ever to be given the power of life or death over the great business ramifications of this country, and the Federal Reserve system should be modified to take from the members such terrific power.

"Moreover, the board should have members representing the farm and the mercantile and manufacturing interests. Now it is dominated by financial men or bankers, and the banker naturally

and inevitably thinks in terms of banking. The bankers have been trained through generations to think one way, and one way only. The resources of this country are so limitless, so vast has been the development, we have merely scratched the ground in comparison with our natural advantages. So I do not believe it will be possible to hold back a revival of business activities throughout the country because the end of Secretary Houston's term is near, and he has been the most sinister figure in the financial life of the country and its most powerful agency of destruction. Until 1913 he was a school teacher. He was made Secretary of Agriculture by President Wilson, and he made a dismal failure in that position. He was then advanced to the supremely important position of Secretary of the Treasury. If President Wilson had not been so much of an invalid, I do not believe he would have permitted Secretary Houston to carry his policy to such extreme lengths."

Some Suggestions About the Federal Reserve System.

Mr. John S. Aldehoff of Dallas, Tex., in a letter to the MANUFACTURERS RECORD, SAYS:

"I am glad to hand you herewith New York exchange, your order, \$6.50, covering year's subscription to MANUFACTURERS RECORD from January 29.

"I regard the MANUFACTURERS RECORD as a great medium of education and enlightenment, intensely patriotic, striving to bring out the very best that is in America for Americans. If every publication strove as earnestly to uphold America and all its institutions as you, there would be few isms and fewer divisions in public sentiment, and we would go forward as a mighty whole."

Mr. Aldehoff enclosed a copy of a letter he had written to President-elect Harding, as follows:

Dallas, Tex., January 6.

Hon. Warren G. Harding,

Marion, Ohio:

Sir—A Senator's suggestion that the Reserve Bank System be changed to a centralized bank with branches would entail new and dangerous changes in business and industrial regimes.

Its administration is not as designed. It is inexplicable that the Congress ever contemplated profiteering. The act creating the Reserve Bank included stability for currency and trade. Its officers, under the Treasury dictates, have, however, diverted the whole scheme into one or profit for member banks. Governmental function has come to dubious ways when the Administration, denouncing profiteering, engages in it to an outrageous degree. The Reserve Bank of New York, in its report of 210 per cent profit, exemplifies a moral turpitude to which financiers may descend who, when to cover their shame, disburse the equivalent of three months' salary in bonuses to employees. Such action does not minimize the wrong, but emphasizes the unrighteousness of a system which permits unwieldy profits.

The Federal Reserve Bank law should be modified. Banks should be forbidden as subscribers, the whole scheme a Government enterprise, in fact the Treasury Department operation needs only enlargement to guarantee elastic currency. It is difficult to persuade people that a rate of interest secured from the Federal Reserve Bank by simple hypothecation, higher than the Government's own bonds afford, is just, or the order wholesome to commerce.

JOHN SEVIER ALDEHOFF.

Reserve Bank Earns 188 Per Cent.

Chicago, January 17—The Federal Reserve Bank of Chicago in 1920 earned 188 per cent on its capital stock of \$13,912,600. The financial statement as of December 30 showed a total surplus of \$23,917,127, compared with \$14,291,642 on December 31, 1919, an increase of \$9,625,485, and undivided profits of \$15,880,168, all accumulated during the year. The net earnings for 1920 are approximately \$26,271,000, or 188 per cent on the stock.

Says Each Copy Is Worth \$50.

WILSON LAMB REEL, Jeweler, Tarboro, N. C.—Enclosed find my check for \$6.50 in payment for subscription to the MANUFACTURERS RECORD. Each copy is worth \$50, and we are very fortunate in being able to subscribe at such a small price.

Free Movement of Traffic, Unimpeded by Labor Strikes, Guaranteed by Texas Law

GOVERNOR HAS POWER TO USE STATE RANGERS IN HANDLING LABOR TROUBLES AND PROTECTING COMMERCE.

[Special Correspondence Manufacturers Record.]

Austin, Tex., January 15.

What is known as the "open port law," which was enacted by the Legislature three months ago, went into effect on January 1. This act is said to be the most far-reaching step toward the free movement of traffic through ocean ports in time of labor trouble that has ever been adopted by any State. The union-labor element regard it as a serious blow to their interests, and are waging a quiet campaign to have the law repealed by the Legislature at the coming regular session, which meets this month. The law also applies to railroads, in that it seeks to protect such common carriers from interference by their employees in their regular operation.

Under this measure the Governor is empowered to use the State Ranger force instead of the National Guard in handling a labor situation such as existed in Galveston last summer, thereby avoiding the necessity of declaring martial law. Protection and facilitating of the movement of commerce by common carriers within this State are provided for under the act, making it unlawful for any person, association of persons, firm, corporation or individual to interfere with any person engaged in the work of handling or moving or transporting any commerce by such common carriers; prescribing punishment to be assessed against the person convicted of such offense, providing for the venue and change of venue and finding of bills of indictments by grand juries other than the grand juries in the county where such offense occurs; empowers the Governor to protect the movement of such commerce by such common carriers by the use of Texas Rangers, either regularly or specially appointed; providing for the prosecution of persons charged with violation of the act by the Attorney-General.

It is unlawful, under the act, for any two or more persons by or through the use of any physical violation or by threatening destruction of his property to interfere with or molest or harass any person or persons engaged in the work of loading or unloading or transporting any commerce in this State, and it is unlawful for any two or more persons to conspire together to prevent or attempt to prevent by the use of physical violence or intimidation or by threats of physical violence or by abusive language spoken or written to any person engaged in loading or unloading or transporting any commerce within this State or performing the duties of such employment.

The provisions of the act do not apply to peace officers in the discharge of their lawful duties.

Any person violating any of the provisions of the act shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than \$100 nor more than \$1000, or by imprisonment in the county jail for a term of not less than 30 days nor more than one year, or by both such fine and imprisonment; provided, however, should any person violating any of the provisions of the act use any physical violence upon or threaten the life of any person engaged in the work of loading or unloading or transporting any commerce, he shall be deemed guilty of a felony, and upon conviction shall be punished by confinement in the State penitentiary for a term of not less than one year or more than five years.

Indictment for violation of the provisions of the act may be returned by the grand jury of any county adjoining the county in which the territory embraced in the Governor's proclamation is situated. Any person indicted may be prosecuted and tried in the county in which the indictment is returned, but no indictment shall be returned in any county except where the offense occurred until after the Governor has issued his proclamation; provided, that nothing in the act as to change of venue shall in any manner bridge the right of the defendant to apply for and secure a change of venue under the existing laws of this State, the same as if the indictment had been returned to the county where the offense is alleged to have been committed. The district judge in whose court the indictment may be returned shall grant a change of

venue upon motion made by the Attorney-General, or at his direction, or by the local prosecuting attorney. The Attorney-General, when directed by the Governor, shall assist the district or county attorney in the prosecution of all offenses committed within the territory embraced in the Governor's proclamation.

The provisions of the act shall become effective without a declaration of martial law. The State Rangers may be used in the enforcement of the provisions, and if a sufficient number of Rangers are not available, the Governor is authorized to employ any number of men to be designated as special Rangers, and shall be paid the same salary as the Rangers are paid, and such salaries shall be paid out of the appropriation made to the executive office for the payment of rewards and the enforcement of the law.

The Governor is authorized, under the law creating an industrial commission, to hear and report on industrial controversies between employers and employees, to appoint a commission of five members, one to represent the employees and laborers and three to represent the general public, such representatives to hold terms of two years and to serve without pay or salary. All hearings had by the commission shall be open to the public.

A Proposal to Limit Use of Natural Gas in Louisiana to Lighting and Heating Purposes.

Baton Rouge, La., January 8.—[Special.]—An ordinance will be introduced in the Louisiana Constitutional Convention, when that body convenes March 1, restricting the use of natural gas in this State to lighting and heating purposes, according to authoritative information here.

It is proposed to accomplish this purpose through the police and taxing power of the State. By placing the proposed ordinance in the new Constitution the State will be authorized to use its police power in prohibiting natural gas from being used in any manner considered wasteful, thus restricting the use of gas to domestic consumers and industrial plants that generate steam power. The taxing authority would be used in taxing what might be deemed excessive use of gas at a high rate and taxing domestic and steam factory consumers at a lower rate.

The purpose of the ordinance is to bring about an era of industrial development in Louisiana and at the same time conserve the supply of natural gas. Those behind the movement believe it will bring many factories and thousands of people to Louisiana in order to enjoy the benefits of natural gas.

If the ordinance is placed in the Constitution, it will impose a powerful restriction on the carbon plants now in operation in the Monroe gas field, if it will not put them out of business altogether. The carbon interests will oppose it, which means a lively fight in the Constitutional Convention.

"Safety First" Taught by Moving Pictures.

A series of instructive meetings to impress safety upon its employees will be undertaken by the Baltimore & Ohio Railroad Co. at all the principal cities and terminals on the system, and it is expected that thousands of employees and their families will attend them. The series will be under the direction of John T. Broderick, superintendent of the safety department. There will be shown the new safety motion picture, "Bulletin 70," which is a visualization of various accidents reported to the Interstate Commerce Commission by the railroads of the country. The railroad man and his wife and children will thus see the dangers that are always present for the employees who neglect to take precautions in their daily tasks. The actual operation of standard trains and the proper and improper ways of handling them by trainmen and enginemen are depicted, and interest never lags. At each place the picture is shown, the employees or members of their immediate families will furnish a musical entertainment.

Cotton As a National and International Problem

[The Coker Cotton Co. of Hartsville, S. C., is one of the leading business institutions of that State making a specialty of high-grade cottonseed and conducting large planting and other business operations. The head of the company is a member of the Board of Directors of the Federal Reserve Bank of Richmond. This company has analyzed the cotton situation fairly and truthfully from a most conservative standpoint. Its statements can be accepted as the views of a man of the highest ethical character, and as intimately acquainted with cotton raising as any man in the South. Before his telling facts all theories in favor of low cost of cotton production vanish. In the interest of humanity, religion and education we invite a careful study of the following; we do not, however, agree with the last sentence of the article; quite the contrary.—Editor Manufacturers Record.]

By COKER COTTON Co., Hartsville, S. C.

As the staple situation has shown very little change since our letter of December 1, we thought that our customers might like to have us discuss the cost of the production of cotton and its relation to the present and future situation. We believe that few outside of the South, and by no means all in the South, realize the distressing features of the present situation or are able to diagnose their effect upon the civilization of the South and the future of the cotton industry. A brief consideration of facts, however, will promptly convince everyone interested in the industry, whether in the North or the South, that there is no future for it at present prices and that a continuation of present conditions would threaten the civilization of the South.

Government statistics show that the average production of lint cotton in the South is between one-third and four-tenths bales per acre, but in order to show how impossible the present situation is we are going to first discuss production figures under the ideal conditions of a bale per acre producing at 15 cents—a price above the present market.

The bulk of the crop of the South is produced on a share crop system, the most popular share contract in this section being one under which the landowner furnished the land, buildings, planting seed and fertilizer, and the tenant furnishes the livestock, tools and labor. Ginning and baling expenses are divided. Landlord and tenant divide the cotton equally, but the landlord receives all of the seed. Under this plan let us see what would be the returns to landlord and tenant on a 20-acre crop of cotton producing one bale per acre.

The farm will contain about 30 acres, including a little woodland and a few acres of corn and other minor crops. If the land is good enough to produce a bale per acre, a fair valuation for the farm, including buildings, will be between \$6000 and \$10,000. A minimum charge for rent on the cotton land, therefore, to cover interest, repairs and taxes would be not less than \$25 per acre. The landlord expecting a bale of cotton per acre would buy not less than \$20 worth of fertilizer per acre for the cotton, and, as he must exercise supervision over his croppers, a charge of \$5 per acre for supervision should be made. The total of these expenses is \$50 per acre. His returns will be one-half bale of cotton at 15 cents—\$37.50; seed, \$10; total, \$47.50, less one-half ginning—\$3; net income, \$44.50. These figures show a net loss to the landowner of \$5.50 per acre. Some may object to the charging of rent and supervision to crop expenses. To this we answer that these are necessary preliminary expenses for crop production, without which capital cannot be secured.

To make this crop the tenant furnished a mule and feed costing per year \$125; depreciation on implements, taxes, etc., \$25; hire for picking ten bales of cotton, \$150; one-half ginning, \$60; total \$360, besides the labor of himself, wife and three children.

Receipts from ten bales of cotton at 15 cents per pound....	\$750
Expenses besides labor of family.....	360
Balance.....	\$390

Divide this amount by 365 and you get the magnificent sum of \$1.07 per day, with which the tenant must purchase clothing, shoes and household equipment and must supply a large part of the food for the family, and besides must pay the doctor and the preacher if they are paid. It is true that the tenant raises some corn, a few vegetables and sometimes has a pig or a few chickens. The pitiful poverty under which most of them live, however, keeps them moving from place to place, the average term of farm tenancy being about two years, and it is the exception rather than the rule for the tenant to have any livestock besides his mule or any poultry.

Please note that with cotton at 15 cents per pound, \$1.07 is the

maximum amount that a tenant can receive for the labor of himself, his wife and three children in producing the ideal yield of one bale of cotton per acre on 20 acres, and this is a larger acreage than the average one-horse crop in this section, and must be further curtailed this year. The item for picking ten bales is absolutely necessary, for the tenant and his family cannot gather more than half the crop in time to prevent serious deterioration of the grade.

Please remember that the average production in the South is less than four-tenths bales per acre. The production in this State, however, for the past year has slightly exceeded one-half bale per acre. Based on one-half bale production, the tenant farmer's expenses would be reduced by the item of picking—\$150 and half of the ginning—\$30, making his expenses \$180 instead of \$360. He would receive for his half share of ten bales \$375, leaving \$185, or 51 cents per day, for the sustenance of his family. But, at least half the tenant farmers make less than one-half bale per acre in South Carolina or less than one-third per bale in the rest of the cotton belt except in North Carolina. How can these people keep body and soul together, much less maintain a decent standard of citizenship, if cotton does not advance materially?

During the years 1917, 1918 and 1919 we had a period of comparative prosperity in the South, during which both the landowner and tenant classes made more money than they ever dreamed of. Many, however, never having seen a \$100 bill before, had no training in thrift and spent their money without thought of the morrow. Many are poorer citizens today than they would have been if we had not had this period of prosperity, for, having had a glimpse of financial heaven and being again plunged into the hell of abject poverty, they are naturally bitter and discouraged.

The only remedy for the present situation upon which all seem to be agreed is acreage reduction. Most cotton sections know no money crop except cotton. How can the landowner or tenant figure to keep body and soul together on a greatly reduced acreage of cotton even if the present price is doubled? Yet they must somehow do this if better prices are to be hoped for.

What the South needs is a steady price for cotton which will allow a fair return to the landowner and decent wages to the tenant. At the present costs of the commodities they must buy for crop-making purposes, 30 cents is, we believe, the lowest price which the industry should consider. Thirty cents will not pay the landowner or tenant on the very restricted acreage that must be planted this year. It will give the tenant farmer producing a bale to the acre on ten acres only a little over \$1.50 per day for the support of his family, or about half of this if he makes a normal yield of one-half bale per acre.

A few weeks ago the writer was talking with a banker from West Virginia, who told him that he had just O. K'd a payroll for a small coal mine, and that the average daily pay of the laborers was over \$17.40 per day, remarking that these laborers were working six hours per day, but that they were only employed 60 per cent of their time on account of car shortage. I have other evidence to show that the coal miners are receiving at least ten times as much as the cotton laborers, who are also paid far less than the laborers in the Western wheat farms or in the mills of any section of the country.

Every interest in the cotton trade should recognize the terrible unfairness of this situation and should refuse to consent to its continuance. Every Southern interest is bending its energies to restore and maintain a price basis for our money crop which will allow something besides a drear and miserable existence—that will allow us to build and maintain schools, churches, roads and other facilities necessary to the maintenance of a decent civiliza-

tion. Bankers, merchants and professional men are co-operating heartily with the farmers to protect the basic industry of the South. This is not enough, however. The whole country is affected by the condition of every section. If the South is stricken with poverty, its laborers will flock to the cities of the North and West and intensify their race and labor problems. If the Southern farm cannot meet expenses for a long period, the resulting financial chaos will affect all the money and trade centers of the country. If we do not receive sufficient money returns to support a decent civilization, the civilization of all sections will be affected.

Large classes in the South have, except for brief periods, struggled along ever since the Civil War in poverty so abject

that decent food and clothes could not be obtained. During the periods when cotton sold for 4½ cents to 8 cents many families had to live on 25 cents per day or less, and right now the prospect for many is no better than then.

The understanding sympathy of the nation cannot prevent terrific losses to the South, nor remove the necessity for acreage reduction and other measures necessary to equalize the supply of the staple with the demand. A nation-wide and understanding sympathy, however, can and will make it easier for us to get the financial support necessary to tide over the present emergency, and will protect us from the re-erection of barriers to foreign trade, without which the cotton farm can never thrive.

No Overproduction of Oil From Standpoint of World Needs Is View of President W. C. Teagle of Standard Oil Co. of New Jersey

PIPE LINE AND STORAGE FACILITIES NOT ADEQUATE, HOWEVER—DOMESTIC CONSUMPTION STILL EXCEEDS DOMESTIC PRODUCTION.

26 Broadway.

New York, January 4.

Editor *Manufacturers Record*:

Replying to your letter of the 31st December regarding the reduction in the amount of crude oil now being delivered, I think you misunderstand the significance of this cut in runs of Mid-Continent crude when you quote reports that this action will result in higher prices of oil products.

The initiative comes from the other end; that is to say, the demand for finished products having fallen off, the local refiners in the Mid-Continent field are not able to handle as much crude as formerly, and the cost of storing oil, with high interest rates and the considerable loss through evaporation and depreciation, makes it more economical to leave the surplus crude in the ground until normal market conditions return.

You understand, of course, that this is the dull season in the consumption of petroleum products, and the usual seasonal depression has been intensified somewhat by the shutting down of many industrial plants, practically all of which are consumers of some of the various finished petroleum products.

The entire situation is summed up in the attached report of December 30 from the Mid-Continent Gas and Oil Association, and the information contained therein is, I believe, just exactly what you are looking for.

W. C. TEAGLE.

The report is as follows:

Effective December 14, the Prairie Oil & Gas Co., the largest purchaser of crude oil in the Mid-Continent field, reduced its purchases 30 per cent through a prorating order. The immediate cause of this reduction as announced by officials was the fact that pipe-line facilities to available markets were inadequate to handle the amount of oil offered. Runs to the Prairie during the first part of December ranged from 180,000 barrels per day to 200,000 barrels, with their deliveries at 140,000 to 150,000 barrels per day, thus necessitating storage of over 40,000 barrels per day. Increased runs to this purchaser at that time arose from the fact that many small refineries and purchasers had shut down or reduced purchases, thus causing much additional oil to be tendered to the larger companies. Deliveries of oil to the Eastern market could not be increased, because the capacity of the pipe lines had been fully reached. The result was a local congestion. The Prairie Pipe Line Co. is now spending between \$15,000,000 and \$18,000,000 in an effort to increase its transportation capacity to the East.

December 18 the Sinclair-Cudahy Pipe Line Co. cut its runs 30 per cent, and on December 23 increased the cut to 50 per cent. The Empire Pipe Line Co. reduced its runs 30 per cent on December 18. Effective December 20, the Texas Company reduced its purchases in Oklahoma 50 per cent, and offered to store the remaining 50 per cent on the credit balance plan, with a charge of two cents per barrel per month. Magnolia Petroleum Co. limited its purchases in Southern Oklahoma December 23 to 50 per cent. December 27 the Humble Company and Texas Company reduced purchases in North and Central Texas 50 per cent, and the Gulf Company did likewise, as to Texas crude, on December 28. The Gulf and Humble companies offer to store the remainder in Texas at a charge of three cents per barrel per month.

Regarding the present economic situation in the oil business in so far as it affects the Texas producers, purchasers and refiners, there is a temporary flush production in North Texas, principally in Stephens county, and also a temporary large production due to two new fields recently opened in the Coastal District of Texas. The cut in the runs there is due to a falling off in the export business and to a decline in domestic consumption, which latter has two main features: First, the slump in the automobile business has materially reduced the number of automobiles, resulting in the reduction of normal consumption of gasoline and oil; second, the winter season always shows a reduction in the local consumption of refined oils, and further, on account of the financial situation, thousands of farmers who are unable to sell their products have stored their cars, trucks and so forth and are using comparatively little gasoline.

A great number of purchasing companies have very little or no available steel storage, and for the above reasons have been compelled in such cases to curtail runs or handle them on a prorating basis. General financial and business conditions are mentioned by others as precluding the possibility of heavy purchases for storing at this time.

The consensus of opinion in the industry is that:

First—There is no overproduction as regards the world needs for petroleum, although during the last 60 days general economic conditions, particularly the rate of exchange, have impaired and embarrassed export trade.

Second—While consumption has materially decreased in the United States because of the general depression and the seasonal change, domestic consumption still exceeds domestic production. Mexican imports constitute the only threat of an excess of supply over demand in the United States as a whole.

Third—With reference to the Mid-Continent field, there is a local congestion caused by inadequate transportation facilities and a decrease in local refining activities.

Fourth—While it is the obvious duty of the oil producers to supply the oil necessary to meet all demands in so far as transportation and refining facilities will permit as is now being done, the production of an excess through indiscriminate and unnecessary drilling will cause an economic waste. Oil brought to the top of the ground for which there is no use evaporates and deteriorates. The production thereof constitutes an unwisely depletion of a limited natural resource, and should be kept to a minimum by a temporary curtailment of operations, so that future needs may be supplied.

Average daily production in that portion of the Mid-Continent field affected by the cut in runs has been as follows:

	October.	November.
Kansas	129,540	160,000
Oklahoma	303,100	310,000
North Central Texas.....	191,433	215,000
Totals.....	615,033	625,000

While the prorating orders have not been in force long enough to afford definite information as to their effect, the best estimates obtainable indicate that production showed a decline in the week ending December 25 to below 600,000 barrels per day for the above-mentioned territory.

The Cost of Cotton Viewed From Two Angles

MR. CHAUNCEY SMITH, A BUSINESS MAN OF ATLANTA, GIVES HIS VIEW, AND MR. W. W. MORRISON, A COTTON GROWER AND STUDENT OF COTTON ECONOMICS, PRESENTS THE OTHER SIDE.

Mr. Smith's Presentation.

By CHAUNCEY SMITH, Atlanta.

In your issue of November 25 Mr. W. W. Morrison presents figures on the cost of growing the present cotton crop, of which he challenges criticism. As I am one of those heretics who believe that the estimates made in this section of the cost of growing cotton, of which estimates Mr. Morrison's is a good example, are often very excessive, I take pleasure in complying with Mr. Morrison's suggestion.

In examining the statement item by item, as he requests, we find, first:

"Rent, 20 acres of land at \$10 an acre, \$200."

This figure will, after deducting taxes at the rate of \$1.25 per hundred on a 50 per cent valuation, allow a return of 6 per cent on a valuation of about \$150 per acre. But this is far and away above the average value of land used for cotton cultivation, which would be nearer \$50 than \$150 an acre. If we call its value \$100 an acre, which is still too high, a fair rent would be \$7.50 per acre, or \$150 for the 20 acres.

"Rent, one plow animal, one year, \$65."

The value of a plow animal, say a mule, has in the recent past varied to such an extent that it is difficult to strike an average. Within the past year or two a first-class mule might have cost from \$300 to \$400. Just at the present time mules are a drug in the market. It is certainly not fair to take the exaggerated value which has prevailed temporarily. If we take the average value of the mule used on a 20-acre farm at \$200, we will be making probably as fair an estimate as possible. This is certainly over what most of such mules actually cost. Most farmers own their own mules, the exceptions being where the land is farmed on shares, the landlord providing all equipment and taking half the crop. When the farmer owns his mule, the item of "rent" can only be construed as the amount necessary to cover interest on the value plus depreciation. Interest at 8 per cent on \$200 comes to \$16 a year. A mule should be good for at least 15 years' effective service; call it 12 years to be conservative, and the annual depreciation charge would be not more than one-twelfth of \$200, or \$16.67. About \$6 a year should be allowed for shoeing, making a total annual "rent" of \$38.67, instead of \$65.

"Feed, one plow animal, one year, \$282."

The normal daily ration for a mule can be taken at about one-fourth bushel of corn, which at \$1.60 a bushel would be 40 cents, and say 30 pounds of hay, which at \$40 per ton would be 60 cents, a total of \$1 a day, or \$365 per year. But, as a matter of fact, the average farm mule is not fed on hay at \$40 per ton, but on corn fodder or some other cheap roughage, and the corn it receives is raised on the farm. In that case, as the same mule, the same tools and the same man that raised the cotton also raised the corn, we cannot credit to the cost of raising cotton the cost of the mule feed, which therefore becomes negligible, because it has already been charged against the cotton. It is fair to estimate that the actual cost of mule feed in the case at hand at not over \$100 a year. If the mule is provided with an acre or two of Bermuda pasture, the cost would be even less.

"Ginning 9600 pounds seed cotton, 20 cents per hundred, \$28.80."

This charge can be accepted as given by Mr. Morrison.

"Deterioration of farm implements, \$20."

The implements required in raising cotton are a plow, worth, say, \$10; a harrow, worth, say, \$20; harness, worth, say, \$15, and a cultivator, worth about \$10—in all, \$55. Estimating the deterioration on these at 15 per cent and interest at 8 per cent, we have amounts of \$8.25 and \$4.40, respectively, or a total of less than \$13—not \$20 as given.

It might be claimed that a wagon to haul fertilizer and cotton to the gin is an essential implement in cotton growing, but inasmuch as the wagon is utilized for other purposes to such an extent as to make its use for this purpose relatively negligible, and as the value of the ordinary one-horse farm wagon would be not over \$75, generally much less, 10 per cent, or \$7.50 a year,

would be a liberal allowance for depreciation, and not more than, say, one-fourth, or less than \$2, could be fairly charged against cotton, a total of \$15 a year would liberally cover this item.

"Labor, one man one year, \$80 per month, \$960."

This is radically erroneous. It assumes that the farmer does nothing throughout the year but cultivate cotton or do work strictly appertaining thereto. As cotton calls for no work during the winter (unless the stalks are left to be cleared then, which ought not to be the case), in all, about five months of active work, how can 12 months of full time be fairly charged against cotton cultivation? As a matter of fact, after chopping, all the cultivation required, even under boll-weevil conditions, should not take over three days a week up to picking time. If we credit cotton with six months of the farmer's time, amounting to \$480, we will be somewhere near a fair assignment.

"Extra labor, hoeing crop over three times, 75 days, \$2.75 per day, \$206.25."

This should not be over one man for two weeks at the outside in chopping, and should not, therefore, amount to over \$33—not \$206.25 as given. The farmer, presumably, does as much of the work as he can himself, and his time is already charged for.

"Picking 9600 pounds seed cotton at \$2 per hundred, \$192."

Reasonable enough, amount and rate considered, but what in heaven's name is the farmer himself doing while this picking is going on? Is he sitting on his porch fanning himself while he hires outside labor to pick for him? Hardly. He is out in the field with a bag, picking himself. An active man can easily pick 200 to 300 pounds of cotton a day, and to pick the whole 9600 pounds would, therefore, require less than 48 days. The picking season will ordinarily last for two months at a minimum (it is often extended over a much longer period), and allowing 20 available working days to the month, the farmer himself will pick practically all of his crop. But Mr. Morrison has already charged all the farmer's time to the crop, so that he here duplicates a charge already made.

This picking charge must be cut out in toto. It is already covered. As a matter of fact, we know that a vast amount of cotton is picked by the farmer's wife and children, but this is at no cost to him. This is a matter of the farmer's choice—or family tyranny—at least in the case of the one-mule farmer under consideration.

"Fertilizers, \$33." and

"Planting seed, \$10."

The figures for these items can be accepted.

Now, compare the figures obtained with those given by Mr. Morrison:

	Mr. M.'s figures.	Revised figures.	Differ- ence.
Rent, 20 acres land, at \$10 per acre.....	\$200.00	\$150.00	— \$50.00
Rent, 1 plow animal, one year.....	65.00	38.67	— 26.33
Feed, 1 plow animal, one year.....	282.00	100.00	— 182.00
Ginning 9600 pounds seed cotton, 20 cents per hundred.....	28.80	28.80	—
Deterioration of farm implements.....	20.00	15.00	— 5.00
Labor, one man, one year, \$80 per month Extra labor, hoeing crop over three times, 75 days, \$2.75 per day.....	960.00	480.00	— 480.00
Picking 9600 pounds seed cotton, \$2 per hundred.....	192.00	—	— 192.00
Fertilizers.....	33.00	33.00	—
Planting seed.....	10.00	10.00	—
Gross expense.....	\$1,997.05	\$888.47	— \$1,108.58
Less 3½ tons seed at \$60 a ton.....	192.00	—	— 192.00
Less 3½ tons seed at \$20 a ton.....	—	84.00	— 84.00
Totals.....	\$1,805.05	\$804.47	— \$1,000.58
3200 pounds of lint, per pound.....	\$56.47	\$25.14	— \$31.33

Mr. Morrison credits cost with cottonseed at \$60 a ton. I have credited it at \$20 a ton—a little below its price at this writing.

It is interesting, as Mr. Morrison suggests, to note the effect on cost of securing a greater quantity of cotton per acre. If with the revised figures given the yield is taken at 300 pounds, of 6-10 of a bale, the cost per pound becomes approximately 15½ cents per pound (charge being made for the extra picking involved and credit given for the additional seed), which is some

three cents above the cost of raising cotton on the experiment farms of the Central of Georgia Railway in 1918, with a production of a little over 6-10 of a bale to the acre.

In the summer of 1919 I took in Alabama a trip with the county agent through a certain county which shall be nameless. It was in July or August, and the boll-weevil was actively at work, it being just the time for cleaning up the infested squares. We saw on the day's trip, I should say, at least 100 farmers. Of these, just one was at work in a field; the other 99 or so were laboriously holding down chairs or supporting pillars in front of farmhouses or country stores. This at all hours of the day—not just at dinner time. Ought the time and this heavy labor of the 99 to be charged up against the cost of the 1919 cotton crop?

The real trouble with cotton raising at the present time is not the low price for cotton, but the high cost of raising it, and this cost is not due to anything inherent in the production of cotton, but to the sinful inefficiency with which it is produced. The cost, whatever it is, is several times what it should be. Those farmers who have been favorably situated and have used progressive agricultural methods have made ample profits off of cotton in the past. The job for those people who want to see the South truly prosperous is to show the farmer how to produce his cotton at a cost which will enable him to realize a profit at the prices which the world is ready to give to him. Coddling him into the belief that the world ought to stand the cost of his inefficiency can do no good, but only harm.

Mr. Morrison Replies to Mr. Smith.

By W. W. MORRISON, Galveston.

I am glad that Mr. Smith has seen proper to comment on my estimate of the cost of growing the crop of cotton this year, recently published in the MANUFACTURERS RECORD, and to accompany his comments with an itemized statement. This is, at least, a move in the direction of having this most important question finally determined, not by the theorizing of theorists, but by records that are supported by the testimony of those who perform the labor and pay the bills incident to the production of the cotton crops.

It is obvious that Mr. Smith has studied the cost of production as to how it affects the interest of the landlord. I have studied it as to how it affects the interest of those who perform the labor in making the crop, and the estimate under consideration conforms to that view. It is looked at in this light because by far the greater part of the cotton is grown by the tenant class, and this class has had to bear the greater part of the hardships, and has had to make the major part of the sacrifices that the price of cotton has undoubtedly entailed during the last 50 years.

This is a distinction which it is well enough to keep in mind while studying the question under review. It is well to keep in mind also that the cost of the crop grown this year was really determined when the price of the commodities that enter into the cost were still at the peak, and that this cost has been affected in no material way by the recent decline. It is, perhaps, well to add here that the estimate in question was based on records taken from the books of merchants that furnished the farmers with supplies, and was, therefore, determined by facts that are reflected in the bills paid by the farmers, and not by theories. In other words, the estimate was determined by conditions as they are, rather than by conditions as they should be, or as some one may happen to think they should be.

"Rent of land, my estimate, \$10 per acre; Mr. Smith's estimate, \$7.50 per acre."

Mr. Smith theorizes about a rental based on a 6 per cent return on the valuation of the land. But we have to deal with facts, not theories. What are the facts? Approximately 65 per cent of the cotton is grown by the labor of tenants. The number of these that pay a money rent is negligible. I have investigated many cases of this kind, and found that this class of tenants pay something more than 25 per cent on a \$50 valuation for the use of the land. By far the greater number give from one-third to one-fourth of the cotton they grow as rent. This figured a rental of \$17.50 per acre for the cotton year ending August 31, 1920; \$14 for 1919, \$13.50 for 1918, and should the average price for the crop this year be no more than 20 cents per pound, it would figure about \$10 per acre. About 25 per cent of the crop is grown by small land owners, who do their own work, and the other 10 per cent by wage labor, used mostly by large planters.

These two latter realize very much more than 6 per cent on a \$50 valuation. Where the landlord provides all equipment and takes half of the crop, the result shows that the laborer pays a still higher price for the use of the land. On the whole, in the light of the actual bills the land renter has to pay, a \$10 estimate of the average rental is ultra conservative.

"Rent of plow animal, my estimate, \$65 per year; Mr. Smith's estimate, \$38.67 per year."

Before the late war a mule valued at from \$100 to \$125 rented at \$25 per year. I have rented many at that price, and this practice was quite general. The records show that the average cost in the spring of 1920 was \$275. In figuring the rent, the usage is to estimate deterioration 15 per cent, use of money 10 per cent, or 25 per cent on the total valuation. In some instances the tenant buys the plow animal outright. In most cases I have investigated the outcome of this is a still higher price for the use of the animal. Unless something abnormal influenced the matter, I do not believe you could have rented a single \$275 mule in the South in the spring of this year at the price estimated by Mr. Smith.

"Feed of plow animal, my estimate, \$282; Mr. Smith's estimate, \$100."

It is generally recognized by all those who know anything about work stock that it is the soundest economy to maintain the health and strength of the animal at the highest efficiency. This can only be done through a food supply that is both adequate in quantity and in quality. In view of this it seems Mr. Smith concedes the correctness of the estimate in question. If the roughage he speaks of is fit to feed to an animal, it must have a money value, and should certainly be charged up as part of the expense, and the same thing is true of pasturage. The scientific feed of one work animal, one year, is 53 bushels of corn, 53 bushels of oats and 3 tons of hay. The records show that this cost the tenants this year: Oats, \$1.44 a bushel; corn, \$2.45 a bushel; country hay, \$25 per ton. I deny the assumption of Mr. Smith as to the same work animal raising the corn, etc. This, however, will be answered in discussing the item of labor below.

"Labor, my estimate, one man, one year, \$960; Mr. Smith's estimate, one man, six months, \$480."

In the estimate under consideration it was stated specifically that it would take all the time during one year of one man and one plow animal to do all the plowing necessary in cultivating a 20-acre farm and the outside work necessary to its general upkeep. What does this general upkeep involve? Clearing the land of bushes and dead debris; keeping ditches in order; keeping the living-house and outhouses, fences and all farm implements repaired; going to the market for supplies, hauling the cotton from the field to the gin, and from the gin to the market; going on the various errands incident to such a life; attending to public duties as a civilized citizen should, and the time for recreation to which every civilized citizen is undoubtedly entitled. Everyone who has tried it knows the great amount of time that these things legitimately take up. Mr. Smith claims that this 20-acre farm can be cultivated and all this work done by one man in six months, with only 14 days of extra help. I absolutely deny that it can, and appeal from the conclusion of Mr. Smith to the people whose labor make the crop and who alone are competent to speak with authority on this question.

"Extra hoeing of crop, my estimate, 75 days, \$2.75 per day; Mr. Smith's estimate, 14 days, \$2.35 per day."

It takes an extra good hand to chop an acre of cotton a day. It will take the average laborer 25 days to chop 20 acres. It requires three hoeings, and sometimes four, to cultivate the crop properly. This has been my experience, which has been a rather extended one, and has been the experience also of everyone who has had to do with growing cotton with whom I have discussed the matter. I therefore absolutely deny the correctness of Mr. Smith's conclusion that this work can be done in 14 days, and again appeal from him to those whose labor and experience make them the only dependable authority on this question.

"Picking 9600 pounds seed cotton, \$2 per 100 pounds, \$192; Mr. Smith makes no estimate."

Mr. Smith concedes that this item is reasonable in so far as the amount and rate is concerned, but claims that it is not a proper charge, because the farmer could gather the crop himself with the help of his wife and children, assuming that the cost of

picking has already been charged in the man's wages. He allows nothing for the labor of the wife and children. This question as to the labor of the man has been reviewed under the item of labor, and there is no necessity for reviewing it here. Mr. Smith attempts, at least inferentially, to justify the low cost of production on the grounds that a part of the work is done by the women and children, which is a cheap form of labor. The discussion of the cost of growing cotton has moved well beyond the place where such an argument could have any standing with a discriminating public, hence no comment is necessary on this phase of Mr. Smith's position.

Mr. Smith severely arraigns the farmers of the South. This was quite the fashion for a good many years after the close of the Civil War. The farmers of that day were charged with being shiftless and nonprogressive. Among other things, I recall it being pointed out that they used a \$2.50 cast-iron plow instead of a \$12.50 steel plow. These charges were cruel and utterly without warrant. The fact is, they used the cast-iron plow because they did not have the price of a steel plow. The men of that day were compelled by a relentless necessity to use the very cheapest implements available in rebuilding their economic and industrial life out of the wreckage wrought by the great war. The records show that the criticisms of Mr. Smith are just as unwarranted now as were the criticisms of that day. What are these records? Southern farmers produced last year \$8,000,000,000 outside of what was realized on cotton. It was clearly the resources produced by the thrift of these men that saved the business and economic life of the South from a debacle in 1914, and did so conspicuously in 1917 and in 1918. It is a reasonable assumption that this great asset of \$8,000,000,000 produced out of cotton in 1919 has enabled the South to withstand the tremendous strain imposed by the reckless program of deflation.

Seventy-five per cent of the agricultural products of the South are now grown by the white race. They are the descendants of the men who fought through a Civil War and faced the nightmare of reconstruction with a resourcefulness and a courage unsurpassed by mankind in any period of the world's history. They have been, and they continue to be, among the real builders of the South's strength and prosperity. If they did not do it, who did? Nor has this prosperity come from the profits on cotton. Cotton has been, in fact, made at a great sacrifice. That is the record. The \$8,000,000,000 and the other billions produced outside of cotton is the real basis of the South's strength. That is also a matter of record. This does not look like the record of a shiftless race of men; indeed, it looks more like a record that is in keeping with the splendid achievements of their fathers.

A few items of Mr. Smith's estimate have been passed over without comment, the difference being too small to justify the space necessary to their review. I regret that space also will not permit any discussion of the ethical principles that differentiate the high-cost view of production from the low-cost view, although it is a most important feature of the questions raised by Mr. Smith's comments.

North Central Texas Oil Fields Produce 72,000,000 Barrels of Oil in 1920, Valued at \$250,000,000.

Austin, Tex., January 8—[Special.]—Compilation of the production records of the different light crude petroleum fields of North Central Texas for the year 1920 show that the total output was a little less than 72,000,000 barrels, with a value of approximately \$250,000,000. During the year a total of 5450 wells were completed in the proved fields at an average cost, it is estimated, of \$30,000 each, or a total of \$163,000,000. Of the 5450 wells that were drilled, 1680 were dry holes, representing a loss of approximately \$50,400,000. Outside of the North Central Texas fields many wildcat wells were drilled, of which no complete record is available. It is stated, however, that these wildcat wells numbered not less than 1000, which would represent an additional loss of \$30,000,000. In the light of these figures it is apparent that the oil industry is not as profitable as the occasional sudden making of big fortunes in the business would indicate. In the matter of successful operations during the year 1920 the larger companies led the list, due to the fact that they confined their exploitations chiefly to proved pools, while the smaller independent concerns did more or less a speculative business of drilling wells.

While the oil excitement over the State has greatly subsided, as

compared with what it was a year ago, there is still much interest taken in the possible development of new fields. In several localities recent completed wells give small oil production, thereby leading to the belief that they may be the forerunners of big production. In the heavy crude petroleum fields of the Gulf Coast region prospecting for new oil domes is going on vigorously, with good indications that new fields may be brought in there within the next few months. The discovery of oil in small quantities in localities of West Texas, 200 to 500 miles from the production of North Central Texas, is regarded as an encouraging feature of the industry in the matter of portending the development of new fields during the present year.

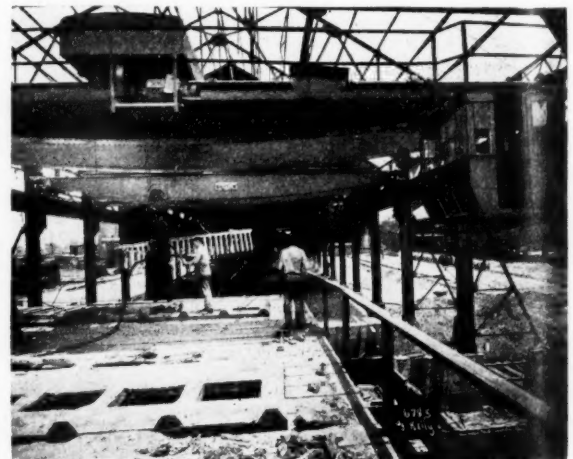
The first few days of 1921 showed a slight increase of production of the light crude territory, as well as of the heavy crude fields. The North Central Texas fields showed a total production of approximately 232,000 barrels a day, which is not far from the peak of daily output in the more exciting period of the industry.

One of the features of development operations during the last few days was the bringing in of a 1200-barrel well by the Prairie Oil & Gas Co. in wildcat territory in the extreme eastern part of Stephens county. This company, as well as the Texas & Pacific Coal & Oil Co., has extensive leases in the promising locality, and other wells will be drilled there as soon as the necessary equipment can be placed on the ground.

Attention has been attracted to the territory 7½ miles north of Breckenridge by the bringing in of a well there by the Guaranty Oil & Gas Co. It has a production of 1500 barrels, and opens up to development a considerable scope of new territory that has heretofore been unexploited. The Breckenridge field proper continues to produce to the full capacity of the pipe line and storage facilities. Many wells in that section are down to the sand, and will not be brought in until the handling of the production can be provided for.

Dovel Patent Pig Breaker a Great Labor Saver.

Birmingham, Ala., January 15—[Special.]—Included among the principal improvements made at blast furnaces during the past year in the matter of labor-saving devices are the Dovel patent pig-breaking machines now in use at the North Birmingham and Sheffield plants of the Sloss-Sheffield Steel & Iron Co. The machine was invented and patented by J. P. Dovel, manager



J. P. DOVEL PIG-BREAKING MACHINE AT PLANT OF SLOSS-SHEFFIELD STEEL & IRON CO., BIRMINGHAM.

of furnaces for the company, and is operated by compressed air. It is capable of breaking an entire cast of from 40 to 50 tons within an hour, and makes possible a minimum saving of 27 men. It eliminates all the labor that was previously used from the cast bed until the iron is loaded on the railroad car.

At the beginning of 1921 Augusta, Ga., has 21 miles of paved streets, as compared with about six miles in 1918. During the past year 8.2 miles of streets have been paved.

SOUTH'S MINERAL INDUSTRIES TO ASK PROTECTION.

Claims for Adequate Tariff to Be Presented at Southern Tariff Congress at Atlanta.

[Telegram to Manufacturers Record.]

Atlanta, Ga., January 17.

The urgent need for adequate tariff legislation to protect the mineral industry of the South against unfair foreign competition is manifested by the keen interest that Southern mineral producers are showing in the Southern Tariff Congress, which meets in this city January 27 to 29 for the purpose of determining the requirements and sentiment of the South as regards tariff legislation for all lines of Southern industry. In order to properly handle the numerous delegations representing mineral industries of the South, a mineral division has been created, and leaders of this industry will be given due consideration at the Tariff Congress. The Graphite Producers' Association of Alabama will send a delegation to present the tariff requirements of that industry, and the talc producers of Kentucky, North Carolina and Texas will also be represented.

The National Clay Producers' Association, of which L. C. Haynie of Augusta is president, will be represented. It is declared that the present tariff of \$1.25 per ton on china clay and kaolin is inadequate, and schedules providing \$6 per ton in the tariff bill to be considered by the next United States Congress will be recommended.

The sulphur industry of Texas and Louisiana, which is said to be heavily handicapped for want of adequate tariff protection, will be represented by the leading sulphur producers of these States.

The talc industry has appointed a committee of Virginia, North Carolina, Maryland and Georgia producers to attend the congress, and it is understood that schedules providing a tariff of two cents per pound on talc, french chalk and steatite, cut, sawed or in cubes or blanks, and one-half of one cent per pound on these products in crude form will be recommended.

Committees representing the Southern iron and steel industry and coke-oven by-products will also be at the meeting.

Representatives of the marble industry of Tennessee and Georgia have been given a place on the program, and Mr. Sam Tate, well-known marble factor of Tate, Ga., has announced that he will tender a banquet to Southern Governors and industrial leaders while the congress is in session at Atlanta.

Leading zinc producers will attend the congress armed with information and prepared to make specific recommendations as to tariff requirements, and the glass-manufacturing concerns, as well as the ferro-alloys, asbestos, mica, potash, gypsum and other infant mineral industries of the South, will have delegations here to present their tariff requirements.

The American Mining Congress, with headquarters in Washington, D. C., is co-operating with the Southern Tariff Association, and its Mineral Tariff Department will be ably represented at the Atlanta congress.

Many Southern mineral industries are suffering heavily from unfair foreign competition, and in many instances mines are completely closed down. These industries will be given a hearing at the Tariff Congress here.

Minerals were not included in the emergency tariff bill now pending before Congress.

J. A. ARNOLD, Manager,
Southern Tariff Association.

Trailer Makers Hold Annual Meeting.

New York, January 12—[Special.]—Two new officers and members of the executive committee were elected at the annual meeting of the Trailer Manufacturers' Association of America, held at the offices of the association in Grand Central Palace, New York, on January 6. J. H. Fertig of Newark, N. Y., president, and H. C. Fruehauf of Detroit, first vice-president, were re-elected. Max Hermann of Beloit, Wis., was elected second vice-president to succeed C. H. Martin of Springfield Mass., and Henry M. Wood of Cincinnati was elected secretary-treasurer to succeed J. C. Endebrock of Cincinnati. An amendment to the by-laws was adopted, the patents committee was enlarged and the standardization committee continued.

Sudan Cotton—British Government Refuses to Guarantee Loan.

Manchester, England, December 21—[Special.]—Lancashire members of the British Parliament have interested themselves for some time in the proposal for extending the growth of cotton in the Sudan, and the Government has been asked to guarantee a Sudan Government loan to construct the Kassala Railway. Yesterday a deputation waited upon Mr. Lloyd George, the Prime Minister, and Mr. Austin Chamberlain, the Chancellor of the Exchequer. Mr. B. Crapper of the British Cotton Growing Association described the conditions in the Kassala district, which he visited last year. He asserted that the officials of the Sudan Government were enthusiastic about the scheme and confident of its success. The British Cotton Growing Association would do everything they possibly could, and were quite satisfied that the Treasury guarantee would not involve any actual liability to the Government. It would enable the railway to be constructed at a less cost in respect of interest.

Mr. Lloyd George in his reply gave the deputation very little encouragement. He pointed out that the financial position of the country was not satisfactory, and all extensions of credit had a tendency to prevent recovery. He referred to the previous guarantee for a £6,000,000 Sudan Government loan, of which £2,500,000 had not yet been taken up. Mr. Chamberlain stated that the Sudan Government was in a position to issue its own loans without recourse to a British Government guarantee. As an excuse for refusing the application, Mr. Lloyd George referred to the fact that last year's cotton crop in Uganda had not yet been disposed of, and this was empire-grown cotton. If the position of the textile industry was such that they had not been able to absorb this growth, why should there be talk of further developments? In reply it was stated that this was a question of merchandising. The East African merchants bought up the crop at a high figure and are offering it at a higher price than the Liverpool quotation. Lancashire spinners, therefore, could get other cotton at cheaper rates.

In closing the discussion Mr. Lloyd George said that although the application could not be granted, this did not prevent the deputation from coming again when probably the work of development now going on in the Sudan had reached a more productive stage.

South Carolina Warehouse System Successful.

By A. B. BRYAN, Clemson College, S. C.

That the State warehouse system of South Carolina is a success, making money for the State and enabling hundreds of farmers to store cotton for better marketing conditions, is evidenced by a report of J. C. Rivers, State Warehouse Commissioner, for the year 1920. Commissioner Rivers' report shows that there are now stored in warehouses of the system 163,818 bales of cotton, and he estimates that by March 1, 1921, the end of the first year of his administration, there will have been probably over 200,000 bales stored and that the system will have earned for the State over \$60,000 to be turned into the State treasury then.

The South Carolina State Warehouse has had remarkable growth in the last nine months, the number of warehouses having jumped rapidly from about 200 a year ago to 829 on January 1, 1921. Of these, 298 were received into the system in December, 1920. Thus one month's entries outnumber the total number in the system a year ago. Other houses are being entered almost daily, the completion of many having been delayed on account of conditions that made it hard to get building material and labor for completing them before or during the ginning season.

The charges for storage in the South Carolina system are three cents per bale, and this has earned for the State during the year \$58,974.48. During December the receipts were 56,223 bales and the releases only 4752 bales. The total in storage at this season is over three times larger than at any previous time. A big office force has been rushed during the fall to keep up with the large volume of work. That South Carolina farmers are determined to hold their cotton as far as possible for a "living" price is evident not only from the above, but from the fact that thousands of bales are stored in commercial and private warehouses and on farms.

Manganese Mines of Arkansas in Partial Operation Only—Hope for Protective Tariff on Ore.

Batesville, Ark., January 19.—[Special.]—Manganese producers in the Batesville-Cushman field confidently expect the Republican Congress to put a protective tariff on manganese ore. At the present price approximately one-half of the mines which show commercial bodies of ore that are equipped or partially equipped with machinery can operate at a profit. The others, which comprise those remote from shipping points or with leaner ore bodies, cannot operate profitably.

Operators in the first class take an optimistic view of the conditions they expect to encounter this year. They do not anticipate any further reduction in the price of ore and think that the industry has reached a settled basis. Notwithstanding that many of the operators who are at work in the field now were crippled financially by the depression which preceded the readjustment, they are going ahead under the new conditions.

One of the principal features in the industry this year will be the lowering of costs by more efficient mining methods and a larger volume of production by a better saving of the ore values.

Some of the biggest shippers in the field produced only the chunk or boulder ore. With this kind of ore, disseminated through the clay in which it lies, is a fine ore termed wash ore, which was not saved. Combined washing and concentrating plants are being erected at a number of the going properties at this time to save these fine values, which will increase the output considerably.

Most of the operators concede that the time has come to forget the high prices of war times and get down to work on the new basis: that they will have to meet competition, and will receive no more for their ore than is paid producers in other fields. Many of them are figuring safe by estimating the price which they can depend on, with the price of Brazilian ore at seaboard, quality considered. Practically all of the ore produced in the field at this time runs 40 per cent or better, with small alumina content. Brazilian ore carries a heavier alumina content, and is not as desirable as the best grades produced in this field. Consequently, the ore produced here is in good demand.

The price at the present time is 60 cents a unit for 40 per cent ore or better. Eight per cent silica is allowable. For every unit below this, however, 50 cents is added to the ton price. Many of the best grades carry only 3 per cent., and the silica premium augments the price.

As yet no contracts have been made between the local operators and the furnaces for ore for delivery this year, but all ore that is offered is being purchased. Most of it is going to the Birmingham furnaces. Contracts will probably be made after the tariff question is settled.

The field this year promises to settle down on a straight business and production basis with no speculation. A few new operators are coming in and starting work on property purchased through the boom. Most of the old operators are getting set for a hard year's work and a good production.

Some new development is promised. Two companies will conduct experiments with hydraulic mining. This method has never been tried in the field. It looks feasible where plenty of water is at hand, and will probably work out successfully, as all of the ore lies in clay.

The Eureka and Southern Hill companies, both operating near Cushman, have consolidated. The Southern Hill has always been hampered by the lack of water, and has never produced anything but boulder ore, notwithstanding that an immense tonnage of wash ore has been proved up by a series of shafts. The new consolidated company expects to lay a pipe line from Polk Bayou, a distance of three miles, of sufficient capacity to operate three combined washing and concentrating plants. The Eureka mine has a big tonnage of ore proved up, and the combined properties should make a tremendous production after the new equipment is installed.

Besides this development, a new washing and concentrating plant is being erected at this time at the Polk-Southard mine, near Cushman. It supplants a small, antiquated plant of small capacity. This property is owned by the Independence Mining Co., which has been a steady operator in the field for the last decade. Besides this plant, they expect to erect another, very similar, on their property at Penters Bluff.

Texas Well 94 Feet Deep Makes 400 Barrels Daily—Successful Operations in Heavy Crude Field at Hull.

Austin, Tex., January 15.—[Special.]—Oil interest of Texas is now largely centered in the phenomenal well that was brought in a few days ago near Fort Stockton, in the western part of the State, several hundred miles from the nearest big production. The fact that this well is only 94 feet deep, and that it had an initial flow of 150 to 200 barrels an hour of 42 gravity petroleum, finally settling down to a flow of about 400 barrels a day, which may be increased by pumping, has made it easily the greatest freak well in the history of the oil industry anywhere. Whether it portends the discovery of a new and perhaps wonderfully productive field remains to be seen.

Experienced oil operators and geologists admit that they are puzzled over such big quantity of oil being found at so shallow a depth and not in any formation or structure heretofore recognized as oil-bearing. It is the theory of some of the veterans in the business that the oil pool or pocket, if it be such, has water pressure behind it and will be exhausted soon. The absence of any gas in the well indicates that the pressure which is forcing the oil to the surface comes from an underground water supply. The presence of this oil, however, is taken as portending that a big pool of the product may exist at much deeper depth.

Several of the larger companies already owned leases in the vicinity of the remarkable strike and are preparing to drill wells. The Grant Oil Corporation, which put down the new well, is said to own the lease on the big ranch of W. W. Turney of El Paso, upon which the well is situated. This 94-foot producer is located almost upon the site of a 1400-foot test well which Mr. Turney drilled in search of oil 20 years ago, and near the spot where the Du Pont Powder Co. and the Calumet & Arizona Copper Co. drilled two and three wells, respectively, ostensibly in search of a sulphur deposit, but not disregarding the possibilities of finding oil. None of these wells have indications of oil, it is stated. The Grant Oil Corporation is now drilling its fifth well upon the Turney lease. In its first well it encountered a small quantity of oil that tested 21 gravity and is a high lubricant.

Notwithstanding the restricted pipe-line runs in the Central North Texas fields, the new year is witnessing an unexpected degree of activity in new drilling operations by independent companies as well as by the larger companies.

Operations in the heavy crude field at Hull, in the coastal region, have been unusually successful during the last several days, approximately 8000 barrels daily of new production having been added to that field's output. It has taken a long time to prove the territory, but it is now recognized as one of the big fields of the coastal territory. The expansion of that field adds much to the strength of the Houston Oil Co., which owns enormous bodies of land adjacent thereto, and which is a full partner with some of the companies that are carrying on development operations there. The Gulf Production Co. and the Humble Oil & Refining Co. were the two most successful concerns in the more recent drilling campaign being conducted at Hull. Two of the Gulf Production Co.'s new wells have an aggregate production of 4500 barrels a day, while the Humble Oil & Refining Co. brought in a well of 2500 barrels a day.

The original producing area at West Columbia promises to "come back" in a notable way following the recent discovery there of a deeper pay sand. The Humble Oil & Refining Co. has just worked over one of its old wells there, and by deepening the hole to 3736 feet obtained a flow of 4000 barrels of 20 gravity oil, a different grade from the oil obtained from the shallower wells.

Moving Pictures—Hardware—Foods.

ANDRE DESCAMPS, Ste. Anonyme Commerciale, Pointe-a-Pitre, Guadeloupe.—I have just formed a company for constructing a moving-picture theater at Point-a-Pitre. I desire the address of a reliable firm which can supply me with the materials necessary for the construction of a theater of reinforced concrete or of wood and stone, and also whatever is necessary for the interior furnishings of the hall: about 1000 chairs of three kinds and one complete moving-picture outfit. I desire equally to secure the exclusive agency in the Antilles for a good American film company for films with French translations. I will also accept with pleasure representation for American manufacturers, being interested in hardware and food products, and also in all other interesting propositions. Correspondence in French suggested.

\$28,000,000 Canal Development in Louisiana Claimed by Bradford to Have Been Financed

WOULD IRRIGATE BY GRAVITY LARGE AREA OF RICE FIELDS—HYDRO-ELECTRIC POWER, NAVIGATION AND HIGHWAYS INCLUDED IN SCOPE OF ENTERPRISE.

[Special Correspondence Manufacturers Record.]

Alexandria, La., January 10.

Construction of a gravity canal system in Louisiana, involving an expenditure of money that will ultimately approximate \$28,000,000, will begin as soon as Congress passes a resolution pending before that body formally declaring Bayou Cocodrie, which is to form a part of the waterway, a nonnavigable stream. Federal engineers have twice before, once in 1890 and again in 1909, declared Bayou Cocodrie nonnavigable, and favorable action on the resolution is considered certain.

This gigantic canal system is the dream of Welman Bradford, a native of Louisiana, and an engineer by profession. To this project he has devoted a dozen or more years of his life, and he is now about to see his dream come true, according to the statements of responsible citizens of Alexandria. Mr. Bradford himself believes that his plans are about to be carried through to realization.

Eastern capitalists, it is understood here, have agreed to finance the canal system, which will be constructed by the Louisiana Gravity Canal Co., incorporated under the laws of Louisiana. The officers of the company are Welman Bradford, president; John E. Miller, vice-president, and Clark H. Rice, secretary.

Mr. Bradford conceived the canal plan many years ago. He was early identified with the present system for irrigating rice in Louisiana. After the system had proved successful it was found that the rice farmers were confronted by a new difficulty, an insufficient supply of water. Deep wells were drilled in many sections, but these proved inadequate to supply the demand for more water.

About that time Mr. Bradford entered into a five-year contract with the Brazilian Government to establish the rice industry in Brazil along the lines developed in Louisiana.

When his contract with Brazil expired Mr. Bradford returned to Louisiana and resumed work on his project to construct a gravity canal system in this State. He made a survey and found that water taken from Red River, at a point above Natchitoches, would flow by gravity to the Gulf of Mexico and thus furnish water that is rich with silt to the rice district of South Louisiana.

Pursuing his investigations further, he found that there were many streams and bodies of water in South Louisiana that could be utilized as parts of the canal system, thus enormously reducing the cost of construction. He also found that there were several lake basins that could be used for reservoirs for the storage of water.

With all this information assembled, Mr. Bradford then drew plans for the system. Foreign bankers agreed to finance the project in 1914, but the outbreak of the European war that year broke up the arrangement. Undaunted by this obstacle, he then took the matter up with American capitalists. Engineers of international reputation made investigations and pronounced the plan feasible.

It was then discovered, when the capitalists consulted lawyers, that it would be necessary to amend the constitution of the State of Louisiana in order to permit the canal company to use any existing waterway as a part of the canal system. Louisiana operates under the old Roman law, which vests in the State absolute ownership of the beds and banks of all streams or bodies of water.

Accordingly, Mr. Bradford and his attorneys appeared before the Louisiana Legislature at the 1918 session and asked for the submission of an amendment authorizing canal companies to utilize any stream or body of water in the construction of a canal system. The Legislature submitted the amendment and it was ratified by the people at an election in November, 1918. It is now a part of the constitution.

When the Legislature held its next biennial session, in 1920,

the necessary laws were passed to carry the amendment to the constitution into effect. This legislation gave the canal company authority to exercise the right of eminent domain and appropriate any property that might be necessary in the construction of the canal. These laws completed all legislation as far as the State is concerned.

The company is now ready to begin the actual work of construction as soon as Congress passes the resolution declaring Bayou Cocodrie nonnavigable.

Mr. Bradford has broadened his plans so as to include the construction of hydro-electric plants along the canal route. He has located places for four hydro-electric power plants, which, when placed in operation, will furnish enough current to light every city and town and supply power to every industrial plant in South Louisiana that wants electrical connection, including the city of New Orleans.

The company also plans to build a trolley line along the entire route of the canal so as to furnish power to electrically propelled barges. The barges would take their power from the trolleys along the bank of the canal, thus furnishing cheap transportation, all fuel costs being eliminated.

When finally completed the canal system will serve five purposes, namely: Irrigation, drainage, hydro-electric power, transportation and highways.

The water will irrigate the rice farms of South Louisiana, and the canals will drain thousands of acres of waste lands and convert them into fertile farms.

The hydro-electric plants, which will be installed at the locks and dams, will furnish the cheapest of power for industrial plants, while the canals will form a network of waterways for electrically propelled barges and motorboats.

It is proposed to surface the embankments made from excavations of the canal and establish a modern system of highways. This latter undertaking will have to be done by the State and the parishes under the highway laws.

A telephone system will be constructed along the entire canal route a distance of 300 miles, so as to furnish rapid communication with all sections of the waterways.

Among the streams that are to form part of the canal system are the Calcasieu River, the Mermontau River, Bayou Cocodrie, Bayou Courtableau, Cane River, Bayou Pierre and other bodies of water. The system will be in the shape of a giant fan, with the handle starting from Red River, above Natchitoches, and spreading out into a great fan south of Rapides parish.

Another connection will be made between the canal system and Red River south of Alexandria. This will be controlled by locks and is to serve the purpose of furnishing an extra supply of water when needed, and to afford boats and barges a short cut to Red River for transportation purposes.

Warehouse and Potato-Drying Plant for Monroe.

Monroe, La., January 12.—[Special.]—The North Louisiana Farmers' Association, an organization of leading farmers of this section of the State, announces that it has perfected plans for the construction of a warehouse and a potato-drying plant at Monroe for the storage of cotton, corn and hay and the curing of sweet potatoes. The organization now has a large quantity of cotton that is being held in storage until market conditions improve. The warehouse and potato plant will enable the farmers to store their future crops and sell them to the best advantage, instead of dumping their products on a glutted market. The stock in the companies will be held by farmers.

NEWS AND VIEWS FROM OUR READERS

[Publication in this department of letters from our readers does not mean that we either approve or disapprove the views expressed. We believe in a full and frank discussion of the mighty questions of the hour, for only in this way can the truth be found. Therefore we often publish letters with which we do not agree.—Editor Manufacturers Record.]

A Discussion of Bonds and Currency.

H. D. TERRELL, Cordele, Ga.

I am enclosing you copy of a letter I am writing our Congressman. If you think it deserves it, please publish.

Mr. Terrell's letter is as follows:

Cordele, Ga., December 31.

Hon. Charles R. Crisp,

Washington, D. C.:

Dear Sir—As you know, our country is passing through one of the most critical periods in its history, caused primarily by an abrupt return to almost normal prices from peak prices that were reached by a gradual four-year increase to abnormal prices for all commodities. If we could have had a gradual decline of prices, say, during a period of two or three years, every one and every line of industry could have easily adjusted themselves to each slight decline and no one be seriously hurt by the deflation. But the abrupt deflation, coming as it did right at the harvest time when the farmers (the real wealth producers of the nation), after working and spending for 10 months of the year, produced a crop under exceedingly high prices for every commodity, were then forced to market their products at prices much below the cost of production; I say this sudden deflation has produced a serious situation in the Central West, the South, and, in fact, in every agricultural community of our country. I understand that the Congress is right now seeking plans for some quick relief of this condition.

I have given a good deal of thought to this matter and have thought of a plan which, though I may express it rather crudely to you, may prove a sound basis on which to work.

Regardless of the statements from the larger banking centers, saying that there is plenty of money and no one need be alarmed, etc., it is a fact that we need more actual money in circulation, and my plan is intended to place more money in circulation right now without increasing our national debt, our individual taxes, and without injuring our national credit. As you will recall, our Government issued and sold during the war about \$26,000,000,000 of Liberty and Victory bonds. The proceeds from the sale of these bonds were used to make loans to foreign countries and in the purchase of war and military supplies, which supplies were, you might say, destroyed completely; and while millions of our fellow-countrymen now hold bonds representing our Government's obligation to pay, practically \$26,000,000,000 of currency has been removed from circulation. My plan is to quickly convert this \$26,000,000,000 of bonds into a circulating currency, as follows:

Let Congress authorize the Treasury to form a holding depository for Liberty and Victory bonds of all issues, and to issue special currency to the amount of \$26,000,000,000 to buy up Liberty and Victory bonds at 100 cents on the dollar, or face value, the Treasury being instructed to buy in all such bonds not later than April 15, 1921, and deposit same in the holding depository mentioned herein. Then as the interest-paying periods on these bonds occur, let the United States Treasury pay into this holding depository all of the interest due on the total bonds in said depository, the amount so paid as interest to be used solely in cancelling that amount of the bonds and retiring a same amount of the special currency issued as above.

This plan will retire all of the Liberty and Victory bonds within 30 years, and it will enable the interest on the bonds to retire the bonds, instead of our Government being required to create a sinking fund for this purpose, this, of course, being done by taxation, necessarily, while my plan allows the interest, which the Government must pay, to cancel and retire the bonds much earlier than the time fixed in the bonds. This plan can quickly convert \$26,000,000,000 of bonds into a circulating currency without adding debt or taxes, and such an action by our Government will bring relief to many millions of our citizens who now hold Government Liberty and Victory bonds, said bonds being quoted below par and not being accepted at this time as col-

lateral by our bankers. If we are forced to sell these bonds at the prices quoted, it will cause losses to many loyal and patriotic citizens who bought "till it hurt" when our Government agents and bankers told us they were the best and safest investment we could make.

Thanking you for your attention, and trusting that you will use your best efforts to put some plan before Congress that will give more money, and give it to us quick, I beg to remain,

Sincerely yours,

H. D. TERRELL.

The West Needs Heavy Fertilization.

CHAS. P. CRAIG, Executive Director Great Lakes-St. Lawrence Tidewater Association, Duluth, Minn.

I wish to express the appreciation of the service that you have rendered in the admirable editorial of December 9, which I read now for the first time, and the eminently fair discussion by Mr. Crowell of the main points brought out at the New York hearing. So far as I can judge, it is entirely fair to those who offer objections. And it is as true a report of the reasons advanced by the advocates of this improvement as could well be devised.

Incidentally, the suggestion has been made by some of our Western distributors that, given regular service between the Atlantic seaboard and the Lakes, there would be a considerable movement in the fall of canned goods from the Baltimore district to the interior. We have not laid much stress upon this, as it involves several contingencies, but it is an interesting possibility.

What is, perhaps, more important is the fact that the States bordering on the Lakes need 2,000,000 or 3,000,000 tons a year of phosphates. The amount that they now use is scandalously small as compared with the heavy fertilizing of the seaboard States. It has been pointed out several times that the movement of Florida phosphates to the Lakes would balance the movement of Lake Superior ores to the seaboard. It is an interesting possibility.

Burning Corn for Fuel.

HUGH E. WEIGHTMAN, Industrial Engineer, 21 N. La Salle Street, Chicago.

Your Daily Bulletin of January 7 presented some material on corn for fuel that is not quite correct. The story has spread over the entire Western States, so I am not blaming you for reprinting the information. However, a few essential facts have been omitted from the story.

It is true that during 1920 Eastern bituminous coals cost \$18 a ton in South Dakota. It is also true that Eastern coals were not obtainable, so that Illinois and Iowa coals were used. Illinois coal sold in the Dakotas for \$10 to \$12 a ton.

Further, assuming that Virginia coal at \$18 a ton was burned, the fuel value of this coal averages 14,000 B. T. U.'s per pound of coal, against 3000 to 4000 B. T. U.'s per pound of corn. The latter values are taken from tests made at Chicago, Ill., and are higher than tests of record made at Argentine. The latter tests show only 2500 to 3000 B. T. U.'s per pound of corn.

Considering the relative heating values, then, with coal at \$18 a ton, the value of corn as a competitor on a heat basis only would be $3000/14,000 \times 18 = \3.85 a ton for corp.

Another fact is that corn ignites slowly, so that it would be difficult to build a fire. Corn requires a greater combustion space for burning and at high burning rates forms a very stubborn clinker.

There is nothing to the corn-burning story. Once a person tries it they never repeat. Corn has been used in Argentine when coal was not to be had at any price. Coal in Argentine costs about \$30 to \$33 a ton at the dock.

THE IRON AND STEEL SITUATION

Stagnant Steel Market at Pittsburgh—Price Readjustment a Factor—Producers Cheerful.

Pittsburgh, Pa., January 17—[Special.]—The steel market is in the same condition as a week ago—that is, altogether stagnant. The stagnation, however, is in new buying rather than in actual trade, for the fact is that about two-thirds as much steel is moving from mill to buyer as moved in an average during the period of very heavy demand, the first nine months of 1920. The demand then appeared to be greatly in excess of the supply, but buyers had to content themselves with what they got. Perhaps if they had received more they would not have been so anxious.

The amount of business being filled, at two-thirds the former rate, is now admitted on practically all hands to be in excess of the actual requirements of jobbers and manufacturing consumers; hence if the business of these buyers does not increase, the volume of shipments will have to be reduced. Steel is accumulating in the hands of not a few buyers.

The rate of steel production now, in terms of steel ingots made, is about 7,000,000 tons a year by the various independent producers and 21,000,000 tons by the United States Steel Corporation, or 28,000,000 tons altogether. During the first nine months of 1920 production averaged 42,000,000 tons a year, so that the present rate is two-thirds of the former rate. Everyone realizes that the rate of steel consumption has decreased more than that. The automobile industry is running at a very light rate, there is less building construction than there was, and even the oil industry, which easily led in point of steel demand, has been tapering off. The oil industry found it cost altogether too much money to drill wells, and postponed a large part of its program to a more fitting time, when it could get supplies and labor at more reasonable rates. The 28,000,000-ton rate represents about 53 per cent of capacity. During the first nine months of last year the mills strenuously endeavored to run full, but were unable to do so on account of various difficulties, the chief one being the insufficiency of rail transportation. The average rate of production was only 80 per cent of capacity.

Attitude of Buyers.

Much reference has been made to there being a "strike of buyers" in the United States. That may be true to an extent as to patrons of retail stores, but it is hardly true of the buyers of steel. They certainly are not in an organized strike, while, furthermore, they do not have definite requirements that they are holding up awaiting the quoting of certain prices. They are waiting in turn on their customers to begin buying more freely, for in few cases is the buyer of steel from the steel mill the actual ultimate consumer. Most steel is fabricated or worked up in one way or another before it reaches the actual consumer.

While steel buyers are not on strike, they do have some definite ideas as to prices they would be willing to pay. The buyer does not pay much attention to the reductions the independent producers made, in the closing weeks of the year, to the Steel Corporation or Industrial Board prices. The buyers hold that the independent prices were simply premium prices, and that all along the real market prices were those of the Steel Corporation. It is pointed out that the Steel Corporation prices could hardly be considered low prices when the Corporation had such earnings in 1920 that after allowing for heavy taxes to be paid the Government there was left as earnings an amount one-fourth greater than the earnings in the best year before the war.

Buyers point out that the present rate of mill operation shows that the quantity of steel sold last year at premium prices was not so large, after all. The Steel Corporation is now making about three tons of steel to one ton by the independents, and the steel the Corporation is now making is chiefly steel that was sold last year, so that the sales last year at basis prices represented what the Corporation made then and what it is making now. A fair estimate seems to be that the quantity of steel that was sold at any considerable premium, say more than \$5 a ton, above the Steel Corporation prices was equal to the amount that would be produced by the whole steel industry in three months of full operation. As the armistice occurred more than two years ago, that is not a great quantity of steel for a post-war advance.

Attitude of Producers.

Buyers of steel, therefore, expect steel prices eventually to recede considerably from their present levels, since they consider present prices to have been the real prices for nearly two years. Producers do not definitely combat that view. They are not disposed to reduce prices now, hence some of them refuse to admit just now the prospect of there being lower prices except by way of great decreases in costs through wage reductions and otherwise, while others admit the prospect, but point out that it is a matter for the future.

In this matter of price readjustment there is one important difference between the respective attitudes of buyers and sellers. The producers consider a prospective or suggested price for a steel product in relation to its average price before the war, while the buyers are always thinking of the lowest prices that were seen before the war. The buyers, in other words, look for a market movement like those that occurred before the war, prices dropping sharply to a very low point and then immediately beginning to advance. Producers, on the other hand, would prefer to strike a fair average and have the market stick there. Thus, in merchant steel bars, for instance, producers think of the average price before the war, which was about 1.40 cents, while consumers think of the fact that several times bars dropped to a level between 1.00 cent and 1.10 cents. On account of everything being on a higher level than before the war, a percentage must be added. Assuming that the proportion to be added is 40 per cent, the buyer would add 40 per cent to a 1.00 cent price, while the sellers would add 40 per cent to 1.40 cents, making about 2.00 cents. The Industrial Board price of March 21, 1919, now the market price again, is 2.35 cents.

Producers Cheerful.

A very cheerful air pervades the iron and steel industry. It is recognized, of course, that business is very bad, but this is regarded as inevitable in the circumstances. It is felt that there is nothing wrong with fundamental conditions, it being necessary simply for a readjustment to be completed whereby business can take hold again. It is unfortunate, of course, that activity is interrupted, but the iron and steel industry is used to that. What is particularly gratifying is that there have been so few failures. Indeed, financial embarrassment is almost unknown in the iron and steel industry, among producers and buyers alike. After the panic of October, 1907, the condition was quite different, the credit of a great many buyers of steel being in doubt. It is felt, too, that when the industry again becomes active it will operate with much more efficiency and economy, and, of course, that makes for progress. The producers have no thought that buyers will expect them to sell at a loss. They may be asked to sell at prices below the present production costs, but the producers are bent upon getting their production costs down.

Pig-iron.

Bessemer and basic grades of pig-iron have been altogether inactive and remain at \$32 and \$30, respectively, f. o. b. valley furnaces, the figures to which prices were voluntarily reduced \$3 a ton by furnace interests at the beginning of the new year. Foundry iron at the same time became quotable at \$33, valley, but obviously this price was too high, and upon the appearance of inquiry for a few 500-ton lots several furnaces promptly agreed to accept \$31.50, which is now the quotable market.

Furnaces Take Losses.

While further declines are to be expected eventually in steel prices, it seems improbable that many dollars more are to come off pig-iron prices for two reasons, because pig-iron has already had a very extensive drop, nearly \$20 a ton in this market, or on a general average of all grades and districts about 25 per cent, and because the cost of pig-iron includes so much freight paid on the assembled raw materials, freights being something the manufacturers cannot reduce. The total amount of freight that has to be paid through to a ton of merchant steel bars ready for shipment from mill is not much more than the amount involved in a ton of pig-iron, hence in point of percentage the advanced price that must be realized by reason of the freight-rate advances, as compared with pre-war prices, will be materially greater in pig iron than in finished steel products. Before pig-iron starts

advancing again it will, of course, sell at prices below those now quoted, but the price will probably be only a few dollars below. The furnaces will not produce pig-iron to be sold at below cost. They will take such losses as are forced upon them, but they will not invite losses. As to taking losses, it is understood that most of the furnaces, if not all, that buy their ore have written off \$1 a ton on their inventories January 1. Figures just published indicate that the average quantity of ore on which \$1 a ton has been written off is about 6½ months' supply, which for an ordinary sized furnace would be about 170,000 tons, so that the loss taken is about \$170,000 per furnace. This loss is regarded as inevitable, but furnaces will not add a single dollar's loss that they can avoid.

Southern Furnaces Now Seeking Business.

Birmingham, Ala., January 17.—[Special.]—A number of sales of pig-iron have been made by Southern furnace companies since the recent reduction in quotations was announced, but the aggregate is nothing as compared to what might be expected. The \$35 per ton price, No. 2 foundry, 1.75 to 2.25 per cent silicon, was believed to be a big inducement, and while a number of consumers came in on the market and bought some of the product, there was nothing like what is desired. For the first time in a long while business is being sought by Southern manufacturers. Representatives of Southern furnaces are visiting the several iron-consuming sections and urging the placing of orders. Some little success is noted. A prediction is heard that within 60 days there will be a better feeling in the iron market. One of the smaller companies, with but one furnace in operation, has sold this month more than its make, and but little more than half of the month has passed. At this rate it is possible, for the first quarter's probable make will be disposed of before four weeks longer. There are more inquiries in hand for pig-iron, and lower prices are being sounded out.

Consumers of pig-iron in the Birmingham territory are giving signs of soon to be in the market for the product. The cast-iron pipemakers are hopeful that the usual lull in the market will soon be passing away and that there will be considerable business offered.

Steel mills' operations in the Birmingham district are on a good basis. Steel Corporation plants have so far shown but little effect of readjustment plans. Independent companies are operating at a greater pace than 50 per cent. At some mills there is a cessation of operations in this or that department for a week at a time, which allows other departments to catch up in the rolling; as a consequence, the accumulation is being minimized.

Foundries and machine shops of this section are looking forward to some improvement in their business shortly. Two of the larger industries in this line have considerable contracts still in hand, while the smaller plants are getting in some work right along. One of the larger plants is still completely down, though repairs are being made. The prospects with this line of business are far from being dark, and so far there is no talk of a disappointing nature. Export business promises to give warrant for steady operation.

The coal and coke markets show no improvement for the week except as to increased production of coal. The weekly output of coal mines in this State has reached 320,000 tons again, despite the strike of the union mine workers, which has been on since September 7 last.

Some of the larger nonunion coal mines of this district have been breaking records in production recently. At Sidney, Walker county, properties of the De Bardeleben Coal Co., a total production of 1250 tons was noted last Friday. This high mark was made at Sipsey, but on nine days only in the history of the operations. Other of the active operations of the district reported big day's outputs recently.

Scrap iron and steel prices remain unchanged, the market having moved but little one way or the other. Hope is still held out that it will not be long before there will be a change of some kind for the better. Additional stock is being brought in by dealers, so that when there is any improvement in market condition no trouble will be experienced in handling all business offered.

Pig-iron and steel scrap quotations in the Birmingham district are as follows:

PIG-IRON.

No. 2 foundry, 1.75 to 2.25 per cent silicon, f. o. b. furnaces, \$35.00; No. 1 foundry, 2.25 to 2.75 per cent silicon, \$36.25; iron of 2.75 to 3.25

per cent silicon, \$37.25; iron of 3.25 to 3.75 per cent silicon, \$38.25; iron of 3.75 to 4.25 per cent silicon, \$39.25; charcoal iron, f. o. b. furnaces, \$50.00.

OLD MATERIAL.

Old steel axes.....	\$22.00 to \$23.00
Old iron axes.....	23.00 to 25.00
Old steel rails.....	17.00 to 19.00
Heavy melting steel.....	15.00 to 17.00
No. 1 railroad wrought.....	16.00 to 17.00
No. 1 cast.....	22.00 to 23.00
Stove plate.....	22.00 to 23.00
Old car wheels.....	22.00 to 23.00
Old frame wheels.....	21.50 to 22.50
Machine-shop turnings.....	10.00 to 11.00
Cast-iron borings.....	10.00 to 11.00

Good Stationary Engines an Asset to Manufacturers— By Properly Burning Fuels and Economically Operating Steam Plants a Big Saving Can Be Effectuated.

300 McClelland Avenue.

St. Bernard, O., December 27.

Editor *Manufacturers Record*:

I read with interest your article in the December 9 issue on the economy of superheated steam and what it means in the saving of fuel at the present high price of coal. I am a stationary engineer and a member of the National Associations of Stationary Engineers on Educational Organization for the Advancement of the Science of Steam Engineering. Our associations are for the benefit of the manufacturer, so to speak, because their engineers, who are members of our organization, have the privilege of bringing troubles of their power plants to the association and will receive any information they desire in regard to the betterment of their plant. We engineers know what a great saving can be accomplished by superheated steam, but how many manufacturers will install the equipment? One of the greatest assets to the manufacturer today is a good, live, competent engineer who knows his business in the burning of fuels and the operation of his plant. I am not saying this because I am an engineer, but because it is the absolute truth. An engineer of today has got to study, and an employer who has an engineer who is always studying and trying to operate his plant at the least possible cost should be heard by the employer when he comes with a proposition to improve his plant. In too many cases, though, the engineer is hampered in his work of economy by superintendents and others, who in some cases know very little of the science of steam engineering. Of course, there are some engineers who would go to extremes. I have seen them, and it doesn't take long to find them out. Just recently I enrolled in a well-known school of combustion engineering, so as to have a thorough knowledge of the burning of fuels when the opportunity presents itself, which is the greatest liability in a power plant and which is so very often neglected. There are so many things to be taken into consideration in the burning of coal—you must have the proper draft, not too much or not too little; you must have the proper grate bar and proper openings in your grate for air; proper baffling of your boiler, so that gases in your stack don't go over a certain temperature, which means that your boiler is taking the heat that the coal is giving out; a large combustion chamber for the proper mixture of your gases, and, above all, good coal—coal that runs between 13,500 B. T. U. to 14,000 B. T. U. Good coal means less work and worry for the fireman, and that means that he will attend to other details with a better spirit. I know; I have been there. Less upkeep on your furnace and grate bars and better economy. You must have the proper instruments to record your draft, stack, temperature and a recording thermometer on your feed-water line, so as to get your boiler-feed water as high as possible. By increasing your feed-water temperature 70 per cent means a saving of 70 B. T. U., or about 6 per cent. The boiler surfaces must be free from scale on the inside; one-sixteenth-inch scale increases your coal consumption 15 per cent. The boiler surfaces must be kept clean on the outside, because soot is one of the greatest insulators we have to contend with. In fact, there are so many things to be watched about an engine and boiler-room that an engineer, to make good, has got to study and read the magazines. In one plant that I became engineer of at one time I made a change in the heating system without any material cost to speak of to the firm and saved from four to six tons of coal every 12 hours I heated with live steam. So, in behalf of the stationary engineer I wish to impress upon the employer to listen to his engineer if he wants to better the conditions in his plant for economy.

CRIS. MOTTERN.

GOOD ROADS AND STREETS

More Than 1100 Miles of Highways Being Built in Georgia.

Atlanta, Ga., January 15—[Special.]—There are now under construction or just completed in this State a total of more than 1100 miles of good roads and 12 miles of bridges, involving a total cost of \$17,512,954. During the past year 114.5 miles of paved road were completed, despite inadequate railroad transportation, scarcity of building materials and other difficulties. In 29 counties contracts have been awarded for 196 miles of paving, in addition to a large number of permanent bridges.

In addition to construction of concrete bridges in 25 counties, in conjunction with road projects, 32 separate bridges are being built at a cost of \$2,927,021. Seven of these projects have been completed, costing \$529,265, while the remaining 25 are in various stages, averaging about 50 per cent complete.

The department has contracted for 906 miles of sand-clay road at a cost of \$9,145,000, so that the roads under construction reach a total of 1162 miles, exclusive of bridges totaling 12 miles long. Of the total cost, the Federal Government will pay \$7,000,000, while the balance comes from the State fund and automobile license receipts. A total of \$2,445,708 has been received from the Federal Government on work costing about \$6,000,000, and over \$1,000,000 of this amount was for work approximating \$2,500,000 completed during the months of September, October and November.

There are in the State 1000 mile of road of primary importance and 4000 miles of secondary importance, while the county systems have an enormous mileage. During the next five years about \$10,000,000 will be available from the automobile fund, and this would be sufficient to build probably 400 miles of roads. Hence it will be necessary to consider the entire State roads situation in an endeavor to supply the needs of all sections.

\$4,000,000 for Mississippi Road Projects Totalling 370 Miles.

Jackson, Miss., January 15—[Special.]—The following tabulation shows the status of work upon 37 road projects, totalling about 370 miles, in the State of Mississippi, which, when completed, will mean an expenditure of more than \$4,000,000, including funds furnished by the State, counties and Federal aid:

Project number	County.	Length in miles.	Type.
1	Itawamba	22.6	14-Foot Gravel
2	Rankin	55.7	12-Foot Gravel
3	Newton	14.1	Earth Gravel
4	Kenner	5.6	Earth Gravel
5	Lincoln	6.8	Earth Gravel
6	Amite	7.0	12-Foot Gravel
7	Madison	4.2	12-Foot Gravel
8	George	13.6	9-Foot Gravel
9	Wilkinson	9.0	10-Foot Gravel
10	Simpson	7.8	12-Foot Gravel
11	Hinds	4.1	12-Foot Gravel
12	Rankin	3.7	10-Foot Gravel
13	Walsh	16.4	10-Foot Gravel
14	Lowndes	7.3	12-Foot Gravel
15	Benton	11.8	12-Foot Gravel
16	Marshall	6.9	16-Foot Gravel
17	Lowndes	5.3	8-Foot Gravel
18	Lauderdale	7.1	14-Foot Gravel
19	Alcorn	3.2	16-Foot Gravel
20	Lee	15.4	15-Foot Concrete
21	Walsh	9.2	12-Foot Gravel
22	Monroe	13.8	14-Foot Gravel
23	Wilkinson	7.5	12-Foot Gravel
24	Pike	9.7	14-Foot Gravel
25	Lawrence	10.9	Earth
26	Holmes	3.7	12-Foot Gravel
27	Adams	11.6	12-Foot Gravel
28	Panola	33.7	Earth
29	Barkey	13.0	16-Foot Gravel
30	Yazoo	6.8	12-Foot Gravel
31	Alcorn	8.1	14-Foot Gravel
32	Jackson	2.6	18-Foot Concrete
33	Adams	3.6	12-Foot Gravel
34	Bolivar	4.5	16-Foot Gravel
35	Jefferson	35.2	12-Foot Gravel
36	Lincoln	3.6	16-Foot Gravel
37	Pearl River	12.9	16-Foot Gravel
		369.6	

5500 Tractors in Use on Louisiana Farms.

New Orleans, La., January 15—[Special.]—There are more than 5500 tractors on farms in this State, which means that Texas is the only State in the South approaching Louisiana in the number of tractors in use. During this year the number will be greatly augmented.

Many of the tractors are used on rice and sugar-cane farms, although they are now used generally in all farming work and to a large extent in lumbering operations.

An Auto for Every 11.8 Persons in United States.

Akron, O., January 15—[Special.]—Motor vehicle registrations for the past year obtained from the various States by the B. F. Goodrich Rubber Co. show there are now 9,274,920 passenger cars and trucks in use throughout the United States—one for every 11.8 persons. This is an increase of 1,670,904, or 21.9 per cent, over December 31, 1919, when there were 7,604,016 motor vehicles registered.

The gain during the past year was greater than that of any previous year, and is considered exceptionally remarkable by officials of the automotive industry in view of the adverse business conditions throughout the country during the last part of 1920. The largest previous gain was 1,457,399, in 1919.

Every State in the Union showed a gain during the year, Virginia leading, with 51.1 per cent, and Tennessee last, with 1.4 per cent. The majority of States showed increases ranging from 18 to 24 per cent. In a general way, the figures show agricultural States made better gains than industrial States.

The race between New York and Ohio for supremacy in the number of motor vehicles has again turned in New York's favor. Final figures showed New York with 692,174 and Ohio with 618,000.

Iowa again managed to win out in its tri-cornered race for sixth place with Texas and Michigan. Last year Iowa had 363,079, Texas 331,310 and Michigan 325,813. This year both Michigan and Texas crept up a little, the final figures giving Iowa 437,265, Texas 431,938 and Michigan 412,690.

An analysis of the registrations by States shows that eight have more automobiles within their individual confines than the entire continent of Europe. These States—New York, Ohio, Pennsylvania, Illinois, California, Iowa, Texas and Michigan—have a

Total est. cost.	Federal aid allotted.	Federal aid received.	Federal aid vouchers pending.	Date of completion.	Per cent complete
\$129,458.84	\$60,000.00	\$23,060.67	.....	.....	55
55,482.91	26,741.47	4,733.06	.....	.....	45
51,380.46	25,000.25	25,000.69	.....	10-1-20	100
49,326.68	24,663.34	12,549.06	.....	.....	90
84,560.63	42,280.46	34,449.08	.....	.....	100
57,358.61	28,570.00	18,891.91	\$6,014.24	11-24-20	100
26,967.43	8,900.00	3,891.91	1,168.06	10-1-20	100
32,717.37	16,358.68	5,134.15	10,133.36	12-29-20	100
65,680.22	32,849.61	30,241.73	.....	4-26-20	100
58,651.10	20,025.35	24,206.48	.....	.....	95
30,950.38	15,000.00	15,000.00	.....	11-5-19	100
20,774.59	10,387.29	.....	.....	.....	25
142,213.50	71,006.75	58,089.27	3,479.71	.....	95
33,100.47	26,580.23	9,355.39	8,477.55	.....	85
109,358.02	54,679.01	19,359.17	.....	.....	42
44,871.25	27,435.62	16,318.86	.....	.....	69
76,488.22	38,214.11	11,984.80	.....	.....	33
41,465.50	30,747.75	12,281.98	5,198.02	.....	40
43,822.74	21,916.37	.....	4,385.61	.....	40
565,587.61	282,793.80	.....	4,429.10	.....	02
96,513.30	49,756.89	24,612.72	.....	.....	50
133,670.27	66,835.13	18,346.58	10,247.76	.....	12
89,617.11	44,808.70	10,188.71	10,633.65	.....	20
100,062.47	50,031.25	.....	.....	.....	95
49,923.96	24,961.98	17,300.24	.....	.....	35
24,236.62	12,118.31	3,348.57	.....	.....	35
240,483.70	74,000.00	.....	.....	.....	10
313,491.60	100,000.00	10,715.89	9,383.41	.....	20
249,172.07	100,000.00	17,922.07	.....	6-4-20	100
49,147.59	24,571.35	.....	.....	.....	95
100,544.73	50,272.36	30,865.37	11,335.26	.....	95
22,234.96	26,112.48	15,971.84	8,373.04	10-13-20	100
80,203.16	40,151.58	.....	8,708.22	.....	35
365,304.51	182,652.25	36,415.63	.....	.....	100
61,214.54	30,607.27	25,885.90	2,984.54	11-23-20	100
114,341.00	57,170.50	3,742.73	6,101.23	.....	22
\$4,016,579.81	\$1,872,757.84	\$545,966.54	\$114,292.81	.....	22

combined registration of 4,295,686, more than 45 per cent of all the cars registered in the country.

Four new States entered the list of those having 100,000 or more cars. They were Virginia, Kentucky, Maryland and Oregon. Of these, Virginia showed the greatest increase, having advanced from 94,100 to 142,154, a gain of 51.1 per cent.

Registrations in the South by States for both 1919 and 1920, as compiled by the Goodrich company, are given below, together with the rank of each State and its percentage of gain:

State.	Rank.	1919.	1920.	Pct. Inc.
Alabama	32	58,898	74,637	26.7
Arkansas	38	49,450	59,828	20.6
Florida	31	55,400	78,590	41.7
Georgia	19	134,876	157,000	16.5
Kentucky	26	96,008	112,680	25.2
Louisiana	33	51,000	70,000	37.3
Maryland	25	95,634	117,394	22.6
Mississippi	34	45,030	65,000	44.4
Missouri	12	244,633	298,240	21.9
North Carolina	21	109,017	149,869	29.2
Oklahoma	17	144,500	213,218	46.6
South Carolina	28	79,143	93,542	18.5
Tennessee	30	80,422	81,500	1.4
Texas	7	331,310	431,978	30.4
Virginia	20	94,100	142,154	51.1
West Virginia	34	50,203	68,000	35.5
District of Columbia	39	25,400	54,329	53.4

Comparison of these registration figures with population figures of the 1920 census shows that there is now one motor vehicle for every 11.8 persons in the country, as compared with one for every 13.9 persons a year ago. If the number of autos continues to increase at the present rate, there will be one car for every family five years from now.

Nebraska has one car for every 5.9 persons, South Dakota one for every 6.1 and California one for every 6.2. Iowa has one for every 6.6 persons.

If Nebraska's average was maintained throughout the country, there would now be 17,912,000 cars and trucks in use, almost double the present number. This is a vital comparison in figuring the possible "saturation point."

New York, which leads with the total number of cars, has only one for every 15 persons. Ohio ranks a little better, having one for every 9.3. Pennsylvania now has one for every 14.9 persons, and Illinois one for every 11.2. These figures show indisputably that more families in the agricultural regions own cars than in industrial sections.

Texas and Oklahoma, the two States which furnish most of the gasoline and oil used by motor vehicles, showed large gains. Texas registrations increased 30.4 per cent, while Oklahoma spurted ahead from 144,500 to 213,218, a gain of 46.6 per cent. Mississippi also showed an exceptional gain during the year, jumping from 45,030 to 65,000.

The gain shown by the District of Columbia—53.4 per cent—is attributed to the fact that more Maryland motorists are now taking out District licenses. There is no reciprocal agreement between Maryland and the District, and motorists desiring to travel in both places must have two licenses.

The gains made by every State constitute the best proof that the automotive industry still continues in its era of almost unlimited expansion, says the Goodrich company. A year ago critics of the industry asserted that no future year would show an increase comparable with that of 1919; that the "saturation point" was almost reached, and that replacement business would constitute a large part of manufacturers' efforts from then on. Yet a still greater gain is shown this year, and the end is not yet in sight.

Motor Vehicles Show Big Increase in Texas.

Austin, Tex., January 15—[Special.]—During 1920 there was an increase of approximately 100,000 motor vehicles registered in this State as compared with the previous year, according to statistics compiled by the State Highway Department. On December 29, 1920, the total number of vehicles registered was 427,314, and it is estimated that fully 3000 remain to be reported by the various collectors, while in 1919 the total registration amounted to 331,310.

The Ely Construction Co. has been awarded the contract for paving in Rock Hill, S. C., to cost \$100,000. It consists of laying three-inch sheet asphalt on a five-inch concrete base. Additional work may be done at the same price per square yard.

Railroads Still Falling Behind.

Washington, January 15—[Special.]—A tabulation from figures reported by the railroads to the Interstate Commerce Commission shows that the net railway operating income for November of the Class One railroads was \$57,741,937, which is \$41,544,063, or 41.8 per cent, below the amount which it was estimated would be earned under the increased rates fixed by the Commission in accordance with the Transportation Act.

Upon the basis of this operating income, the carriers would earn annually approximately 3½ per cent on the value of their properties as tentatively fixed for rate-making purposes by the Commission. This is 1.1 per cent below that estimated on the basis of October earnings. To have realized a return of 6 per cent on their valuation, as provided by the Transportation Act, the railroads should have earned \$99,286,000 in November. The tabulation is based on reports received from 200 railroads with a total mileage of 229,754 miles.

Total operating revenues for November were \$568,697,087, or an increase of 34.6 per cent over those for the same month last year. Total operating expenses were \$485,466,885, or an increase of 29.2 per cent compared with the same previous month. The net railway operating income is an increase of 170.8 per cent over that for November, 1919, but this increase is principally due to the fact that the strike of bituminous coal miners during that month one year ago greatly reduced the freight tonnage, thus lowering the carriers' revenues.

Compilations show, however, that for the first quarter since the guaranty period ended on September 1 the net railway operating income totals \$219,507,735, which is \$101,449,265 less than was expected to be earned under the rates fixed by the Commission and effective on August 26 last. On the basis of that net operating income for the three months' period the carriers would earn 4.1 per cent annually.

As in the case of September and October, the net operating income in every district fell below 6 per cent during November. In the Eastern district the railroads fell 49 per cent below, the Southern 48 per cent and the Western 34 per cent. Calculating on the basis of the showing for November, the railroads in the Eastern district would earn 3.06 per cent upon their tentative valuation, the Southern district 3.12 per cent and the Western district 3.96 per cent.

For the Southern district complete reports show that the operating revenues were \$86,759,185, or an increase of 27.1 per cent, over those for one year ago, while total operating expenses were \$77,328,213, which was an increase of 22.6 per cent, over the same month in 1919. The net railway operating income was \$8,479,612, which was an increase of 150.3 per cent over that for November last year.

Week's Oil Output Shows an Increase.

Daily average gross production of oil in the United States for the week ending January 8 was 1,221,075 barrels, as against 1,209,325 for the week ending January 1, according to figures of the American Petroleum Institute. The estimated daily gross average production of the Mid-Continent (light oil) field for the week ending January 8 was 629,790 barrels, as against 633,270 barrels for the preceding week. Estimated daily average production of Gulf Coast (heavy oil) field for week of January 8 was 105,110 barrels, as against 92,835 for the preceding week. Combined estimated daily average gross production of the Southwest field for the week ending January 8 was 734,900 barrels, as compared with 726,105 barrels for the preceding week.

Production continues to be curtailed in Oklahoma-Kansas by the cut in pipe-line runs. Daily gross production of 348,250 barrels compares with 406,500 barrels of three weeks ago and a gain of 3000 barrels over the preceding week. North Texas shows a loss of 5255 barrels; Central Texas a loss of 3340 barrels. North Louisiana is credited with a daily average gross production of 80,415 barrels, a gain of 2115 barrels. Claiborne parish is estimated at 50,540 barrels, as compared with 48,750 barrels for the preceding week. On the Gulf Coast the bulk of the gain of 12,275 barrels is due to the new production in West Columbia, which is credited with 33,000 barrels for the week ended January 8, against 22,000 for the preceding week. Hull pool is reported at 23,500 barrels, a gain of 3500 barrels.

Wyoming and Montana show an estimated gain of 2945 barrels as compared with the preceding week.

RAILROADS

\$18,000,000 FOR RAILROAD FACILITIES.

Extensive Improvement Program Announced By Norfolk & Western Railway.

Roanoke, Va., January 17—[Special.]—Nearly \$18,000,000 are being spent by the Norfolk & Western Railway Co. for improvements on its lines, including the opening of 26,000 acres of new coal lands in West Virginia, the electrification of piers at Norfolk, the building of 1000 of the largest coal cars in the world, and many modernizations which, it is believed, will be most favorably reflected in the commercial life of the East, West and South.

N. D. Maher, president of the railroad, has issued the following statement outlining the improvements planned, some already under construction:

"The coal piers of the Norfolk & Western are at Norfolk, Va., and during 1920 there were dumped over them 8,807,803 tons of coal. To expedite the delivery of coal to vessels, and decrease their loading time, the following improvements are under construction:

"A new dumper capable of handling 120-ton capacity cars is being constructed, and, in addition, Piers 2 and 3 are being electrified. The estimated cost of the improvement is \$650,000.

"These improvements will increase the dumping capacity of our terminal about 50 per cent, and in addition to this will permit us to dump coal from any type of car and handle it to any one of the three piers, giving complete flexibility. At present coal in 100-ton cars cannot be handled on Piers 2 and 3, but must be delivered over Pier 4.

"A trimming machine for handling coal cargoes is being designed at an estimated cost of \$150,000. This machine, which is in the nature of an experiment, we estimate will save two-thirds of the labor now required for trimming coal in vessels. It is intended to install one machine at this time, and if found satisfactory five additional machines will be provided.

"Additional yard tracks to expedite switching and delivery of coal are under construction at an estimated cost of \$210,000.

"This improvement consists in a rearrangement of yard tracks and the construction of additional pull-out tracks in order to avoid a conflict of movement at the throat of Lamberts Point Yard, thereby making it possible for trains to pull in and out of the yard without interfering with the delivering of coal to the Barney Yard. This will greatly improve the capacity of the terminal, and, in addition, will effect an operating saving.

"At Roanoke, Va., where the general offices and principal shops of the company are located, a water supply is being arranged for, including a 2,000,000-gallon reservoir, and a pumping capacity of 6,000,000 gallons per day, at an estimated cost of \$223,000.

"The city supply, which is our present source of water at Roanoke, is insufficient, and this improvement is necessary to insure our present and future water supply. In addition, as our consumption increases, an economy will be effected in the cost of water.

"Additional engine terminals, including a 40-stall roundhouse, a machine shop, a power plant, etc., all to expedite repairs and reduce expenses, are being constructed at an estimated cost of \$1,000,000.

"This expenditure makes it possible to take care of our large Mallet locomotives, and will also result in a decreased turning time and decreased cost of repairs.

"The freight depot is being motorized at an expense of about \$50,000 to expedite the receiving, handling and loading of freight.

"At Radford, Va., a cross-tie-treating plant, with a capacity of 1,000,000 ties per year, is being constructed at a cost of \$500,000, the object being to treat soft-wood ties so that they may take the place of white-oak ties, which are growing scarce.

"The construction of this tie-treating plant is necessary by reason of our inability to procure a sufficient supply of white-oak ties. It permits the treating of ties other than white oak, and eventually will result in a saving due to our conserving the available supply of tie timber.

"At Bristol, Va., additional yard tracks and engine terminals are being constructed to cost about \$1,300,000.

"The construction of these facilities is made necessary by the increased business and increased size of motive power handled at Bristol. We estimate that this will enable us to handle 100 per cent more business through Bristol. The new yard is of sufficient capacity to handle all trains without doubling over, and will also result in economy in maintenance of power.

"Between Bluefield and Norton six passing tracks are being extended at a cost of \$150,000.

"The extension of these passing tracks is essential to enable us to handle recently increased business.

"At Lenore, W. Va., a coal branch 18 miles in length on Pigeon Creek is being constructed, which will open up about 26,000 acres of coal land estimated to produce 130,000,000 tons of coal, the estimated cost being \$2,000,000.

"At Columbus, O., a bridge across the Pennsylvania Railroad yards at Cleveland avenue, to carry the freight house spur, is being constructed at a cost of \$140,000 so as to prevent interference with yard work.

"Improved labor-saving shop tools are being installed at various points to cost approximately \$900,000.

"New locomotives are being constructed at a cost of \$664,000. Superheaters and stokers are being applied to locomotives at a cost of \$214,000. These improvements will effect a saving in fuel and an increase in the power of locomotives.

"Five hundred new 100-ton capacity gondola cars will be built at a cost of \$1,600,000, and 1000 new 120-ton capacity hopper coal cars will be provided at an estimated cost of \$5,750,000. These large-capacity cars will decrease our 'break-in-tuos,' increase our ability to handle business, increase the permissible train load, increase the percentage of revenue load, and effect other operating economies.

"Improvements in existing equipment, facilities, etc., will cost approximately \$2,200,000. These improvements consist of placing heavier axles under coal cars, placing improved draft gear, and otherwise strengthening and improving the equipment in such a way as to increase its capacity and serviceability.

"These expenditures are being made with a view to increasing business, expediting train movement, and handling the public business with greater efficiency and economy."

Status of Railroad Revolving Fund.

Washington, January 15—[Special.]—A statement showing the status of the \$300,000,000 guaranty fund created under Section 210 of the Transportation Act to enable the railroads of the country properly to serve the public during the transition period immediately following the termination of Federal control has been made by the Interstate Commerce Commission. The total amount of this revolving fund was \$300,000,000, of which \$40,000,000 has been temporarily reserved to meet claims and judgments arising out of operations during the period of Federal control, leaving \$260,000,000 available for loans to the carriers.

Loans totaling \$205,721,357 have been approved by the Commission as of December 31, 1920, as follows:

To aid in meeting maturing indebtedness.....	\$86,173,759
To aid in the acquisition of equipment.....	41,385,870
To aid in making additions and betterments to existing equipment	17,291,294
To aid in making additions and betterments to way and structures to promote the movement of freight train cars	60,870,433

Additional loans aggregating \$51,653,594 may be made on pending applications. This will leave \$2,625,049 of the revolving fund available for additional loans. There will be credits to the revolving funds during the transition period of interest and repayment of principal with respect to loans heretofore made, which credits will be available for still further loans.

\$500,000 Increase of Capital Stock.

A meeting of stockholders of the Charleston Consolidated Railway, Gas & Electric Co. of Charleston, S. C., is to be held there on February 14 to consider a proposition from the directors to increase the capital stock by an issue of \$500,000 of common shares, making their total \$5,000,000, which, with the present preferred stock, will make an aggregate of \$5,500,000. The increase is to pay for additions to the property.

Washington & Newport News Railroad.

Channing M. Ward, 1817 Hanover avenue, Richmond, Va., who in 1915 and 1916 promoted plans for the construction of the Washington & Newport News Short Line Railroad, to be about 150 miles long from the national capital to Hampton Roads, is requesting residents of the several counties which would be traversed by such a line to furnish him with data "that will show business for the proposed railroad or that will demonstrate the development of future business after the railroad is constructed."

Mr. Ward also appeals to the county commissioners of King George, Caroline, Spottsylvania, Westmoreland, Northumberland, Lancaster, Essex, King and Queen, King William, Middlesex, Matthews and Gloucester counties in Virginia, and to other officials therein, in addition to business men of all classes, to aid in the plan of construction, as the time approaches, according to his views, when the work may be undertaken.

When the plan was first announced, five years ago, it was stated that land for extensive terminals on the waterfront at Newport News had been donated to the company, and that right of way for the approach to it had been assured. Besides this, rights of way for 65 per cent of the line had been obtained in the several counties through which it would run.

The war prevented consummation of the plan, as it similarly prevented the execution of many another project of merit. It is now hoped to revive it.

Roanoke & Salemburg Railroad.

A report from Dunn, N. C., says that the promoters of the Roanoke & Salemburg Railroad Co., which was chartered last spring to build a line 35 miles long from Dunn via Salemburg to Roseboro, N. C., have postponed collection on notes due for stock subscriptions until October 15 next, this action being to aid in relieving the local financial situation which resulted from the low prices of farm and lumber products. The Dunn Hotel Co., organized last year to build a large hotel on the site of the Divine Hotel, which was burned several years ago, has also taken action along the same lines, postponing collection on stock subscriptions until later in the year.

The Roanoke & Salemburg Railroad is expected to eventually become a link in a through route from the coal fields of Virginia and West Virginia to Southport, N. C., at the mouth of Cape Fear River, 30 miles south of Wilmington. Its immediate purpose, however, is to develop a rich farming section that needs transportation facilities. Construction is expected to begin next autumn.

W. S. Royal of Salemburg, N. C., is president, and Mrs. W. J. Jones of the same place is secretary.

Jackson & Eastern Getting Right of Way.

Chairman W. D. Hannah of the special railroad committee at Jackson, Miss., has reported to the Board of Trade there that rights of way have been obtained for the Jackson & Eastern Railway from Sebastopol to Goshen Springs, Miss., which is more than half way between the proposed termini, and that agents are now securing the remaining rights of way from Goshen Springs via Fannin to Jackson. This proposed railroad will be 39 miles long via the route selected, and construction awaits the decision of the Interstate Commerce Commission, an examination having been conducted at Jackson December 13, of which the record was sent to Washington. The line will run through some virgin forest lands, as well as fine agricultural territory. S. A. Neville of Meridian, Miss., is president of the company. Connection will be made at Sebastopol, giving a through route to Meridian, Miss.

Electric Locomotives in Mines.

Technical Paper 264 of the United States Bureau of Mines covers preliminary investigations of storage-battery locomotives and shows what is being done to make them safe in gaseous sections of mines. Danger existed with respect to the incandescent-lamp headlights of the locomotives, as well as with respect to their mechanism. The paper explains and illustrates the methods adopted to render the use of the engines quite safe. It is written by L. C. Hsley and H. B. Brunot.

New Equipment, Rails, Etc.

Norfolk & Western Railway has decided to build 1000 coal cars of a capacity of 120 tons each, according to an announcement from Roanoke, Va., where its headquarters are located. The company, it is further stated, recently completed at its own shops and then tested a car of this capacity, in accordance with the plans announced several months ago, and the results were such as to warrant building a large number of these huge cars. Some, if not all, of the cars may be built at the Roanoke shops, but, in view of the declining tendency of materials, the work may be postponed for a while, especially as the company already has under construction at Roanoke 500 coal cars of 100 tons capacity.

Atlantic Coast Line Railroad's new-equipment purchases under the financial arrangement recently announced include 25 Pacific-type locomotives and 5 six-wheel switching locomotives, all of which will be built by the Baldwin Locomotive Works. In addition to these there will be 25 steel passenger cars, 400 coal cars, 500 box cars and 200 phosphate cars to be constructed by several builders.

Santa Fe System has ordered 40,000 tons of rails, and Southern Railway 6000 tons, all from the Illinois Steel Co., Chicago.

Baltimore & Ohio Railroad has ordered 15,000 tons of rails from the United States Steel Corporation.

Florida East Coast Railway is reported in the market for 10 Pacific-type and 5 switching locomotives, besides 6 passenger cars.

International & Great Northern Railroad is in the market for 4 Mikado-type locomotives and 4 switchers.

Gulf Coast Lines have ordered 5 passenger engines, 850 freight cars and 4000 tons of 85-pound rails.

\$1,000,000 Bond Issue Proposed.

A special meeting of the stockholders of the Nashville, Chattanooga & St. Louis Railway Co. has been called for March 7 at Nashville, Tenn., for the purpose of authorizing the issue and sale of \$1,000,000 of first consolidated 5 per cent mortgage bonds. These securities are to be issued under the mortgage of April 2, 1888, there being, it is stated, 50 miles of main line upon which no bonds have now been issued. It is provided that these bonds may be issued at a rate not exceeding \$20,000 per mile either to redeem prior liens, to increase the original mortgage debt to not over the amount named, or for additional mileage, improvements or betterments, but the bonds, excepting those issued for the redemption of prior liens, must be approved by the stockholders. A total of \$20,000,000 is authorized. Of this, \$15,347,000 have thus far been issued.

Industrial Branch Purchased.

A report from Little Rock, Ark., says that the Missouri Pacific Railway Co. has purchased the Little Rock & Argenta Railroad from the Factoria Land Co., which owned and operated it, serving a number of industries with transportation facilities. It is observed by an officer of the Little Rock Board of Commerce, according to the report, that this transfer of the road will result in opening up for development an entirely new manufacturing territory, and that there will be an improvement in the freight rates.

Freight Station to Be Built.

Erection of a new freight station at Dallas, Tex., is proposed by the Missouri, Kansas & Texas Railway Co., according to a report from there, which says that the improvement will cost about \$300,000. While the plans for the building have not been completed, it is said that it will be built of brick and tile, and that it will be thoroughly up to date.

Building and Loan Association Organized.

Palm Beach, Fla., January 17—[Special.]—The Palm Beach Savings and Loan Association has been organized at West Palm Beach with a capital of \$200,000. The officers of the company are: S. C. Hall, president; W. H. Da Camara, vice-president; H. E. Robinson, secretary; W. J. von Behren, treasurer. The directors include S. C. Hall, H. E. Robinson, W. H. Da Camara, W. J. von Behren, L. D. Hughes, G. N. Hatch, J. B. McGinley, R. P. Paddison, B. D. Cole.

LUMBER AND BUILDING MATERIALS

Activities of Southern Pine Association a Direct Advantage to Lumber Industry and to General Public in Southern States.

New Orleans, La., January 17—[Special.]—"The report voluntarily made by the Federal Trade Commission to Congress is what the lumbermen of the country have been expecting from the Commission since its investigation of the industry last winter," says J. E. Rhodes, secretary-manager of the Southern Pine Association, in commenting upon the report just issued by the Federal Trade Commission covering the work of the various regional lumber associations and the lumber industry in general.

"There is nothing of any consequence in the report about the Southern Pine Association. It is charged, however, that the associations of lumber manufacturers stifle competition and maintain prices. How well they have succeeded is shown by the fact, well recognized throughout the South, that lumber prices are today lower than they were before the war, and are generally below the cost of production. Since March 1, 1920, prices of Southern pine have declined from 40 to 65 per cent, due to the lack of demand, with a result that many hundreds of mills have been obliged to close down and others are operating part time in order to keep their crews together."

Mr. Rhodes states that the Federal Trade Commission instituted its investigation of the lumber business at a time when no effort was being made to ascertain the reasons for high prices of all commodities in the latter part of 1919, and was concluded before the liquidation of the lumber and other industries set in during the spring of 1920. "The lumbermen," says Mr. Rhodes, "recently asked the Federal Trade Commission to extend its investigation to cover the conditions existing since last March, in order that any report it might make would fairly represent the present situation."

"The Southern Pine Association has had no more influence in increasing the price of lumber than it did in increasing the prices of all other commodities known to man, from sugar to silk shirts. We conduct a wide variety of activities, the legality of which the Federal Trade Commission has never questioned, but which no reference is made in its report. The association does not now nor has it ever issued any price list, nor has it at any time or in any way suggested to the manufacturers of Southern pine what they should ask for their lumber. The most active competition exists among the mills which subscribe to the services of the association. Our chief function is the inspection and grading of lumber."

That the Southern Pine Association took over many of the activities of the old Yellow Pine Manufacturers' Association of St. Louis is denied by Mr. Rhodes. "In its report," he declares, "the Commission intimates that the Southern Pine Association continued to do some of those very things for which the former association was put out of business. This is most certainly untrue, for the only similar activity we conduct is the inspection and grading of lumber."

"The investigation of the work of this association was welcomed, and the freest access was given to the examiners of the Federal Trade Commission to our files and records to enable them to determine the character of work being done. Besides inspection of lumber, this work includes extensive advertising and trade extension, engineering and scientific research, safety-first and welfare work, traffic and credit information, cut-over land development and the publication of statistics. The latter embrace production, stocks and orders. One would judge from the attitude of the Bureau of Investigation that business must be conducted without information concerning its statistical status."

"If there is anything questionable about the work of the Southern Pine Association, we should certainly desire to be advised of it, because we have scrupulously endeavored to avoid even the appearance of violating the law. Much of our work, while of direct benefit to the Southern pine lumber industry, is of very direct advantage to the public, particularly in the Southern States."

Two-Rate Wage Scale Established at Norfolk.

Norfolk, Va., January 17—[Special.]—With the idea of securing greater efficiency and reduced building costs, the Builders' and Contractors' Association of Norfolk, an organization which was successful in its fight for the open-shop principle, has established a two-rate wage scale, which classifies building tradesmen into first and second-class workmen, with a difference of \$1 per day between the classes. Under the scale just worked out the rate of pay for workmen of the first class remains at approximately what the association has been paying for some time, while the second-class workmen get \$1 per day less.

A strenuous protest has been raised by the labor unions against this new scale, as well as against the open-shop plan. Members of the Builders' and Contractors' Association affirm, however, that they are getting all the workmen they can use, and that as their work increases they have no difficulty in securing additional employees in every trade.

It is the theory of the association that the new scale will result in an effort on the part of first-class men to maintain their efficiency, while the second-class men will put forth their best efforts to secure the first-class rating. The contractors say that it will also eliminate the extravagancies of the closed-shop plan, under which an inferior workman got the same scale as the most skilled man on the job.

The scale as announced by the organized contractors, on a per-day basis, is as follows:

	First class	Second class
Carpenters	\$7.00	\$6.00
Cement finishers	6.00	5.00
Electricians	7.00	6.00
Ironworkers	7.40	6.40
Painters	7.00	6.00
Plasterers	8.00	7.00
Roofers (slate)	7.00	6.00
Sheet-metal workers	7.00	6.00
Shoecarriers	4.80	
Common laborers	3.20	

Housing Construction Work Far Behind.

Chicago, Ill., January 17—[Special.]—Building construction in the United States is estimated to be behind from 18 to 24 months in volume. This is particularly true of houses, apartments and tenements—structures used for actual housing purposes. The following tabulation shows for each of the last 10 years (1911-1920) the estimated total cost of building, average cost per square foot and number of square feet built:

Year.	Total cost.	Average cost per square foot.	Square feet built.
1920	2,466,162,000	\$6.37	387,434,700
1919	1,467,921,300	3.20	458,600,000
1918	492,163,300	2.65	185,700,000
1917	816,941,000	2.27	358,500,000
1916	1,137,360,900	1.82	622,800,000
1915	931,937,300	1.52	613,100,000
1914	891,845,500	1.55	575,400,000
1913	980,971,600	1.61	613,300,000
1912	1,027,515,200	1.63	630,400,000
1911	962,499,700	1.59	605,300,000

For the five-year period, 1911-1915, the annual average construction was in excess of 600,000,000 square feet. For the succeeding five-year period, 1916-1920, the annual average construction was but 400,000,000 square feet. Total construction for the last five years is 1,000,000,000 square feet less than for the five years of the pre-war period. In other words, building is just that much short of what should have been done in order to care for normal needs and without allowance being made for increased building requirements created by increased population.

To take up this slack and meet necessary construction requirements, 2,000,000,000 square feet should be built in 1921 and 1922.

Architectural Association Elects Officers.

Raleigh, N. C., January 15—[Special.]—The North Carolina Architectural Association held its annual session here this week, with about 30 members in attendance. Officers elected for the next year are: Harry Barton of Greensboro, president; J. B. Lynch of Wilmington, vice-president; M. E. Boyer of Winston-Salem, secretary and treasurer.

President-Elect Harding Interested in Solution of Housing Problem.

New Orleans, La., January 17—[Special.]—J. E. Rhodes, secretary-manager of the Southern Pine Association, has just returned to New Orleans, and reports a very satisfactory visit with President-elect Harding at Marion on January 8. A delegation of lumbermen called on Mr. Harding to interest him in measures which may be taken to bring about the resumption of building, in order that the nation's housing shortage may be relieved and that serious unemployment of building trades labor may be avoided if possible.

"It was pointed out," states Mr. Rhodes, "that so far as lumber is concerned, it has taken its liquidation, and building may proceed, but as lumber represents about one-quarter of the total cost of construction, it is evident that costs of building cannot be reduced until there is a decline in the prices of other building materials and to some extent of building trades labor.

"We found President-elect Harding keenly interested in the housing problem and willing to endorse any movement which might be undertaken to relieve it. He strongly approved the proposed conference on the subject, and said that he hoped building might be revived in order that there might be no serious unemployment, realizing that general resumption of building means general employment."

The committee also discussed with Mr. Harding forestry and conservation measures which have been introduced into Congress, particularly the Snell Bill, which already has been approved by the American Forestry Association and many other national organizations.

Lumber Market Situation Summary.

Chicago, Ill., January 17—[Special.]—No great improvement in the general lumber market situation is looked for during this month, since the seasonal demand for all building materials is light and little buying of stocks by the retailer can be expected. Inventories which are being made by distributors, it is believed, will establish as a fact the belief widely held by the trade that stocks held by the yards are below normal volume. Low stocks and a fairly well-gauged idea of requirements for spring building should be reflected early in February by an appreciable run of orders on the mills. Today the mills of the larger producing regions have a minimum of unfilled orders and with little new business coming in. No large volume of stock is, however, being piled up because of the number of mills temporarily shut down.

An outstanding feature of the lumber manufacturing situation is the deflation of prices which has taken place in the last six months. Prices at the mill are in many instances below the cost of production, and sales for the time being are made on this basis, though it must necessarily follow that either prices must advance or costs be further cut in order that manufacturing may be continued. Liquidation in the lumber industry has been carried further than in most other lines, reaching a point from 40 to 60 per cent lower than the high prices prevailing nine months ago.

Improvement Seen in Yellow-Pine Trade.

Savannah, Ga., January 17—[Special.]—Lumbermen in this vicinity believe that the real revival of trade in the yellow-pine market will take place early in the spring. It is thought that in the process of readjustment now under way lower wages will result, which will stimulate building activity throughout the country, and thereby greatly increase demand for lumber.

Just now oil fields are the best buyers of lumber, but their demands have recently slackened, due to reductions in takings of crude. Rural demand is weak, due to the poor prices paid for farm products and livestock.

12,000,000 Trees for Reforesting Europe.

Washington, January 17—[Special.]—Douglas fir seed trees to the number of 12,000,000 to be used in reforesting the war-devastated areas of France and Belgium, and also certain sections of Great Britain, were shipped to those countries last month through their embassies here by the American Forestry Association.

Activity of Southern Pine Mills for Week.

New Orleans, La., January 15—[Special.]—Reports of the Southern Pine Association covering the activities of 125 mills for the week ending January 7 are as follows:

	Cars.	Feet.
Orders on hand beginning of week.....	9,129	198,254,493
Orders received during the week.....	1,625	35,290,125
Totals	10,754	233,544,618
Shipments during the week.....	1,891	41,095,847
Orders on hand end of week.....	8,863	192,477,771
Orders		Total feet,
Shipments		35,290,125
Production		41,095,847
Normal production.....		39,762,561
		82,049,623

Shipments were 3.28 per cent above production for the week, and orders were 11.25 per cent below production. Orders were 14.07 per cent below shipments for the week.

The production was 51.54 per cent below normal, and shipments were 49.95 per cent below normal production. Orders were 56.90 per cent below normal production, and the decrease in "orders on hand" during the week amounted to 2.91 per cent.

Prospects Bright for Construction Work.

The Standard Fuel & Material Co. of Birmingham, Ala., organized in June, 1920, reports a splendid record during its first six months in business, and believes that conditions now are steadily improving. A recent statement issued by the company said, in part: "While business has been off in the building line for the past 60 days, the prospects are exceedingly bright for a general wave of construction work to start not later than April 1. The country has done little construction for the past five years, and authorities declare that never in the history of the nation have prospects been brighter in the building line. Prices of building supplies have fallen to the extent of 20 to 50 per cent compared with the high peak reached last summer, and it is generally thought by leading material men that the bottom has been reached."

Large New Mill Placed in Operation.

Lafayette, La., January 17—[Special.]—Barnett Bros.' large sawmill began operations here last week. It is one of the largest and most modern mills in the section. Two hundred employes are already at work, and this number will be increased to about 500 as work progresses to capacity. The plant has been so constructed that it can be easily extended and enlarged. A railroad is now being built between the Assumption parish line and this city. When the mill started operations there was 2,000,000 feet of timber in the large pond.

Lumber Notes.

The Modern Investment & Improvement Co. of Martinsburg, W. Va., recently organized, has taken over a tract of about 1700 acres of timber land in Morgan county, West Virginia, between Paw Paw and Magnolia. A contract has been made with M. Cox to manufacture and deliver at railroad points lumber, crossties, mine props and similar products. A number of sawmills will be installed to handle the work. The officers of the new company are: V. H. Cazer, president; F. J. Kenny, vice-president; J. T. Moose, secretary, and A. F. Feltner, treasurer. V. H. Cazer will act as manager.

The Johnson Lumber Co. of Scooba, Miss., has begun operations again, after being closed down since August. New machinery has been added, permitting a greatly increased output. It is believed that other mills in this section will reopen shortly if the market continues to improve.

The large sawmill of the W. M. Carney Company at Atmore, Ala., has resumed operations after the Christmas holidays, during which time necessary repairs and overhauling of equipment was completed.

Reform, Ala., mills are running at capacity following the usual shutdowns for repairs and overhauling at the first of the year. They believe that prices have started upward, and that business in some volume will be forthcoming within the next few months.

TEXTILE

Activities Are Increasing in the Southern Cotton Mill Districts and Conditions Show Continued Improvement.

Textile men in the vicinity of Charlotte, N. C., are taking on new faith and facing the future with increased confidence as a result of the optimistic reports in textile trade and business circles. There are indications, say mill men, that this is eventually to be a busy year for the industry, and that within the next few months additional thousands of spindles will be humming full time, and even overtime, in order to meet the demand for goods.

Indicative of the upward trend is the announcement of the Gastonia Cotton Manufacturing Co. of Gastonia, N. C., that, beginning Monday of this week, the mill resumes full-time operations, running both day and night. For some time past this mill has been running full daylight time, but has not operated at night. Many mills have started up since the holidays, some on part time and others on full time. Operators are returning to their places, and others are getting ready to go back to the mills. Contracts secured by the Gastonia mill will insure its operation for several months at full time. The demand for yarns and curtain scrim is reported good. The increase in orders is improving steadily and somewhat in volume.

The Florence Mills of Forest City, N. C., a large flannel mill, which has been running only four days a week since the middle of October, will resume full-time operation also. Other mills in the county will soon be running at or near capacity, and general conditions are much improved. Two mills are to be completed during this year and 25 or 30 houses erected.

Orders for yarns and all kinds of textiles are larger and more numerous than for some weeks, and inquiries are appearing in greater volume and a general feeling of hopefulness prevails.

Cotton-spinning mills in the Greenville, S. C., section are rapidly resuming operations at near full time, following increased demands for print cloths, pajama checks and similar cotton goods, for which orders of substantial size have been placed recently. Mills which some weeks ago curtailed operations to three and four days a week have resumed operations on a 48-hour-a-week basis, with a readjustment of wage scale of from 25 to 40 per cent reduction at the various plants.

W. L. Gassaway, president of a large mill, has received an order for 400,000 yards of pajama checks, and it is reported that the Graham mill interests have received orders for gingham and other print cloths. One encouraging feature of the orders now being placed is that the prices are higher than those placed recently for the same goods, indicating the upward trend in the market. These and other substantial orders that have just recently been placed with mills in this section indicate that business is beginning to pick up in the cotton-mill industry, and that the depleted shelves of merchants and distributors are shortly to be filled.

The C. O. Graham interests, operating the Camperdown Mills, and the Mills Manufacturing Co. at Greenville and the Enoree Manufacturing Co. at Enoree, S. C., have received orders since Christmas which will make operation of the mills assured without interruption until probably April.

The Victor Monaghan Cotton Mills Co., operating a number of large mills in the upper part of South Carolina, have resumed operations on a 48-hour basis. Other mills at Easley, Fountain Inn and Simpsonville are running at or near full time.

Plans \$7,500,000 Capital Increase.

At an annual meeting to be held on January 27 the stockholders of the Riverside & Dan River Cotton Mills of Danville, Va., will consider increasing the maximum capital stock by \$7,500,000. The present capitalization is \$12,000,000. During the spring of 1920 the company began the erection of additions to its mills, which, as described in these columns at that time, were estimated to cost \$3,500,000 and to include additional buildings, 35,000 spindles, 1700 looms, electric power drive equipment, etc. These enlargements have not yet been completed, although good progress has been made in construction. W. W. Ayres is secretary of the company.

Hosiery Men of South Sure of Relief Soon.

Charlotte, N. C., January 17—[Special.]—The consensus of opinion expressed at the meeting here last week of representatives of more than 100 mills was that the bottom has been reached, and that within the next eight or ten weeks readjustment will be completed. The conference was called by the Southeastern and Southwestern divisions of the National Hosiery and Underwear Manufacturers' Association, covering the entire South, and optimism prevailed throughout the convention, which was attended by 55 hosiery and underwear manufacturers.

Of the more than 100 mills represented, all except two are now running from three to four days a week, but the opinion was expressed that within two or three months all will be running full time. Prices for cotton and yarns have reached bottom and are now showing life, and it is predicted that when there is a change it will be upward, with a gradual strengthening in market conditions and increase in prices.

The convention endorsed the American Products Export and Import Corporation, and also adopted resolutions endorsing the efforts of the National Association of Knit Goods, selling agents, New York city, to strengthen contracts and prevent cancellations. A resolution providing for continuation of the plan that all shipments be made on the basis f. o. b. the mills was adopted.

Cotton, and How It Is Manufactured.

Cotton and cotton manufacture are analyzed in an entertaining and instructive manner by James Paul Warburg of the First National Bank of Boston in a booklet published by that institution and bearing a title composed of the first four words of this sentence, which is accurately descriptive. The contents are presented in a style appropriate for the perusal of the layman, and anyone who reads the booklet may readily comprehend them. There is nothing of a technical nature, yet all is accurate and complete. Mr. Warburg has begun his story at the very beginning of the use of cotton, describing its history, distribution, cultivation and manufacture. The industrial processes are covered from the receipt of cotton at the mills to its delivery as finished goods. There are many illustrations to supplement and enlighten the text, showing, it is stated, several processes of manufacture that have never before been illustrated. Besides, there is a mass of valuable statistics in which it is stated that 53 per cent of the total number of cotton spindles in this country and 56 per cent of the looms are in New England. Furthermore, customers of the bank manufacture, it is said, about 90 per cent of the textile machinery used in all the cotton mills of the United States. Copies of the booklet may be obtained by applying to the commercial service department of the bank.

Contemplates Erecting an Additional Mill.

According to reports from Richmond, Va., the Chesterfield Manufacturing Co. of Petersburg, Va., manufacturer of high-grade cotton hosiery yarns, has decided upon the erection of an additional and larger mill during the present year. The existing plant located on Swift's Creek, also the proposed new mill, are to be operated by electric power generated at a hydro-electric development now under construction in Chesterfield county. A concrete dam 35 feet high, having three miles of backwater and a 198-foot spillway, has been completed at a cost of \$75,000. An electric-power plant will be installed which will furnish electricity for lighting and power not only to the two mills, but also to other industrial plants that may be located there. J. F. Taylor of Kinston, N. C., is president of the company.

Installing Dyeing and Finishing Departments.

Announcement has been made by E. O. Davis, manager of the Paducah Hosiery Mills, Paducah, Ky., that in the near future the company will be operating its own dyeing and finishing departments. Construction work on both structures is nearing completion. The finishing building is of brick, one story high, 60x62 feet.

The Durham Hosiery Mills of Durham, N. C., have been awarded a contract for 1,600,000 pairs of hose for the navy, announcement to this effect being made here today by officials of the company. More than \$250,000 is involved in the contract.

Commendations, Kicks and Comments

Don't See How Any Business Man Can Afford to Be Without It.

O. F. PAXSON, Paxson Tie & Lumber Co., Abbeville, Ga.—We have only been a subscriber for your journal a short while, and will say that we do not see how any business man can afford not to read your paper, as it is progressive and on the job always in looking out for the betterment of business, etc. We wish to state, too, that we approve of the fight you are making for the tariff and the showing up of the Federal Reserve policy.

A Help to a Minister in His Constructive Work.

KILLIAN LUMBER CO., Valdosta, Ga.—Enclosed we hand you check for \$13.00 to renew our subscription to the MANUFACTURERS RECORD for one year from December 25, 1920, and ask that you kindly send the MANUFACTURERS RECORD one year to Rev. N. H. Williams, 109 W. Valley Street, Valdosta, Ga. Mr. Williams is a thinker as well as a spiritual preacher, and we feel sure that the MANUFACTURERS RECORD will be of much help to him in his constructive work during the year 1921.

In Other Words, When Patient Is Sick, Bleed Him Copiously

M. B. LEWIS, Gibbsland, La.—Herewith check for \$6.50, covering subscription for another year to the MANUFACTURERS RECORD, which has been to me and, no doubt, to all your subscribers, a source of much encouragement, and hope for a general betterment of prevalent conditions.

It is my humble opinion that other influences and the abnormal conditions existing throughout the world, which have so upset the law of supply and demand, have been more or less contributory to the existing stringency in all lines, and cannot agree with you in the opinion that Secretary Houston and the Reserve Board are wholly responsible, through process of deflation, which had to come sooner or later; but if the remedy was too drastic, it is well to remember that the patient needed heroic treatment.

How a Georgia Banker Views the Situation.

T. S. JOHNSON, President Citizens Bank & Trust Co., Jefferson, Ga. For check herewith please send Mr. W. T. Bush, Lexington, Oglethorpe County, Georgia, the MANUFACTURERS RECORD for one year.

Such conditions as the present have never existed in my State before. I am 67 years of age, and with the exception of 10 years have spent my life in Georgia. The action of the Federal Reserve Board and Secretary of the Treasury has blighted more hopes and lives in the South and West, causing desolation and despair, where hope and prosperity should have abounded, than any course that could have been pursued. If the views of Hon. Wm. G. McAdoo could be put into practice now, what a change would come over our land. Is there no hope until after the 4th of March? It can't be made worse. Wishing you success in your noble fight for humanity and for righteousness.

Keep a Stiff Upper Lip—There Will Be No Extravagant Inaugural, and Maybe Other Clouds Will Disappear As Well—The Feed-crop Plan Will Help a Lot.

GRANT D. PERRY, Madison, Ga.—Enclosed find check for \$6.50 to pay subscription from January, 1921, to January, 1922. We appreciate your faithful work for the producers of the country, especially for the women and children in the cotton fields, who are slaves to the consumers of raw cotton and to the bear speculators and gamblers. The present price of cotton is less than half the cost of production; wheat is selling at a loss; the wool men are busted; tobacco below cost. Millions in Europe starving—more millions starving in China. The Republicans howling about extravagance of Democratic administration, but we can afford to pay \$60,000 for inaugural ceremonies! We of the South think we have a good man, President-elect; a man who earnestly desires to be President of the entire country, but we fear he has too many advisors. We fear advisors will have more influence than his own good common sense. We are grieved that he will allow advisors to cause this Government to spend \$60,000 for the inaugural blowout, when the West, the South and country generally are in financial distress, the world in chaos and starving, all business up in the air. We survived Sherman's march through Georgia, we endured and overcame the reconstruction after the Civil War, we have gone through the dry years and wet years, we have overcome the panic years, we will survive the deflation period after the World War, for these people do not know how to surrender or give up. But, after all, what is the use to say work, work to people who know nothing but work and who cannot get pay for work which has been finished? What is the use to plant cotton in face of certain loss? Better hold what we have and plant food and feed crops.

Here and There About the South

With a view to co-operation with the farmers and improving conditions of agriculture by the use of fertilizer, one of the banks of Magnolia, Ark., has entered into an agreement with the county farm agents whereby 20 farmers in Columbia county are to receive one ton of fertilizer each for five years under certain specified provisions that will insure the best results. The tests provide for a complete crop plan for the five-year period.

The colleges of North Carolina turned away 2308 potential students last fall for lack of educational facilities. This fact is being emphasized in the campaign which is now under way in that State with a view to securing a greatly increased appropriation for the institutions of higher learning.

Special attention has been directed toward improving the Muscadine grape in the vicinity of Willard, N. C., and the work has met with much success, several new types being produced. In the Sand Hills district the Scuppernon, which is a variety rich in grape sugar, shows considerable possibilities as a commercial venture and as a money crop for this section.

A survey is under way by the Government from Ede's Fork, in Morgan county, West Virginia, on the Great Cacapon River, to Capon bridge, in Hampshire county, a distance of 45 or 50 miles, for the purpose of ascertaining the feasibility of constructing a dam 150 feet in height to impound a water-supply reserve for Washington and other cities.

A Chamber of Commerce has been organized in Lewisville, Tex., with an initial membership of 200, the directors being Charles G. Thomas, J. W. Degan and others. A farm bureau will be organized later.

Richmond, Va., will be the distribution point for the entire Southern territory of the Fisk Rubber & Tire Co., which will take possession in a few days of its new warehouse and distributing station in South Richmond, erected at a cost of \$145,000 and now practically complete.

A new wing containing 106 rooms has just been completed by the Hillsboro Hotel at Tampa, Fla., at an approximate cost of \$125,000. The hotel now has a total of 320 rooms, and represents an investment of \$750,000.

The State of Texas has purchased a cotton-oil plant at Richmond, Tex., and will run it by convict labor, the State grinding its own seed.

The Bradentown (Fla.) Board of Trade has plans for the formation of a building and loan association to furnish needed aid in the construction of new houses in the town.

A tow of two boats left Cincinnati recently bound down the Mississippi to Memphis and New Orleans, loaded with 10,000 tons of steel from Pittsburgh, destined for the cities of the Mississippi Valley and other points. It is declared to be the heaviest single shipment in the past 34 years.

As Viewed by a School Superintendent.

M. E. BROCKMAN, Superintendent City Schools, Chester, S. C.—I have been an interested and enthusiastic reader of your splendid journal for a year. During this time I have followed up carefully your predictions on quite a number of things pertaining to the welfare of our nation, and in nearly every instance you have been right. I recall so well the first issues of the MANUFACTURERS RECORD in 1920, how you called upon and pleaded with the Federal Reserve Board not to push their policy of deflation as they were then beginning. The result in September proved your statements to be right.

I have certainly enjoyed reading every issue of your magazine during the past 12 months. I cannot get along without it, so I am herewith enclosing my personal check for \$6.50, which pays my subscription one year in advance.

MECHANICAL

New Revolving Crane.

A new and improved crane of the full revolving type has just been placed on the market by the John F. Byers Machine Co. of Ravenna, O., as a companion to the Byers auto-crane, more than 700 of which, it is stated, are now in service. Production of the new crane is said to be well under way, and a considerable number are expected to be shipped during the late winter.

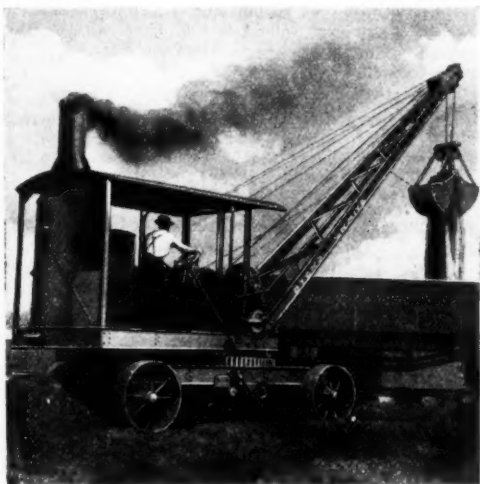
An insistent demand for a full-circle swing machine to supplement the auto-crane, which has a half-circle swing, has led to the introduction of this new model; it is not to take the place of the auto-crane, but is to provide for handling work on which a half-circle swing crane would not be suitable.

The new machine is equipped with differential drive for road wheels or apron tread, enabling it to turn curves readily, especially on soft ground, and when using the apron treads or clips on the driving-wheels. The road-wheel machine may be converted to an apron-tread traction machine by the owner in the field; the railroad-type crane drives all four wheels and is equipped with a coupler bar for switching cars and is capable of making 10 miles per hour. Outriggers can be supplied for the railroad crane if desired.

The steam-operated crane has a 42-inch butt strap A. S. M. E. boiler and 7x7-inch Byers high-duty horizontal barrel-guide non-reversing hoisting engines. The gasoline-operated crane has 45-horse-power four-cylinder engines especially designed for this kind of service. The electric-operated cranes have about 40-horse-power motor, this depending upon the kind of current available. Few parts, and all of them accessible, are marked features.

Swinging is done by either swinging clutches or an additional engine (on steam crane only), as desired, and the swinging engine is twin-cylinder steam-reverse high-speed type. The tagline mechanism has an automatic drum to prevent the bucket from twisting, this operating whether the boom be high or low. A one-piece steel casting center arrangement assures a secure fastening in the heart of the crane. There are also several other fine features.

The crane may be equipped with generating unit and 36-inch magnet for handling scrap, the 42-inch boiler permitting this



REVOLVING CRANE IN USE.

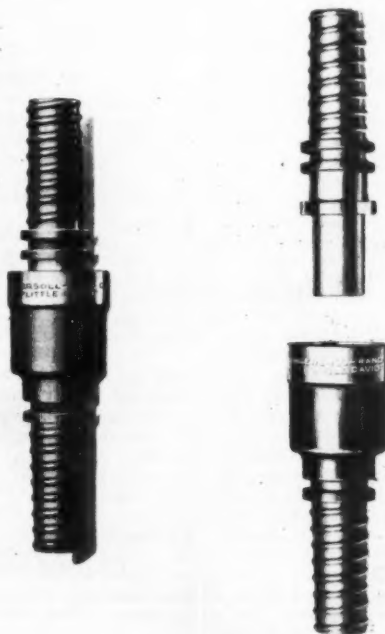
installation. Its capacity is based on handling a $\frac{3}{4}$ -yard bucket in sand at 30 feet radius, or equivalent to 5200 pounds at this radius. The hoisting capacity is five tons at 12 feet radius. These capacities are for road-wheel crane, but somewhat greater for apron-tread equipment and somewhat less on railroad wheels.

By the completion of its large new machine and erecting shop adjoining the present plant at Ravenna the company has provided much-needed space for manufacturing its established line of products as well as for the new crane.

Improved Hose Coupling.

A hose coupling with several new and important features was recently placed on the market. Hose couplings which become leaky after short use are the cause of serious air losses. Another trouble commonly experienced with many couplings is jamming or sticking through some slight injury. The design of this coupling has been with the view to overcome these troubles. Its main features are sturdiness and simplicity and all-around ability to bear lots of abuse without affecting its service. Actual tests over long periods, it is stated, have fully demonstrated its reliability.

The coupling consists of two parts, and the larger end is fitted with a V-shaped rubber gasket, providing an air-tight joint. The



NEW HOSE COUPLING.
(Closed) (Open)

gasket is prevented from blowing out, should the coupling accidentally be disconnected under pressure, by a protective shoulder inside the coupling. There are no exposed parts which might be liable to injury and cause jamming or sticking. The locking shoulders are heavy, with large bearing surfaces. The locking spring is strong and durable, and can be replaced if necessary. The parts are made of a metal not subject to ordinary rusting or corrosion. The smaller end has a very liberal bearing in the other, which assures alignment and long wear. Another feature is the absence of an outer sleeve liable to injury. The air ports are straight and of uniform diameter, offering least resistance to the air.

The coupling may be connected or disconnected by a quarter-turn. A groove in the hose end of each part allows using a hose clamp to attach securely to the hose.

These "Little David" hose couplings are manufactured in $\frac{1}{2}$ -inch and $\frac{3}{4}$ -inch sizes, which are interchangeable. Gaskets are also interchangeable.

The new couplings are made by the Ingersoll-Rand Company, 11 Broadway, New York.

Revised Federal Petroleum Specifications.

A bulletin containing the latest revised form of petroleum specifications for purchases by the Federal Government has been issued by the Bureau of Mines. Fuel-oil specifications have been completely revised, the old gravity specification eliminated and other changes made. Copy of the bulletin may be obtained by those interested upon application to the Bureau of Mines, Washington.

Construction Department

EXPLANATORY.

The MANUFACTURERS RECORD seeks to verify and obtain additional information regarding all enterprises reported in its Construction Department, by direct daily correspondence. Further facts of news value are published later from telegraph, mail and representatives' reports. We appreciate having our attention called to errors that may occur.

DAILY BULLETIN.

The Daily Bulletin of the MANUFACTURERS RECORD is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$20.00 per year.

Airplane Plants, Stations, Etc.

N. C., Charlotte.—Morrow Aircraft Corp., capital \$100,000, inceptd. by H. L. Morrow, Charlotte; William H. Claren, Wilmington, Del.; William F. Burton, Seaford, Del.

Tenn., Jellico.—Airplanes.—Southern Carplane Mfg. Co. changed name from Jellico Aero Club, capital \$250,000, L. E. Woody, Prest.-Gen. Mgr.; mfrs. airplanes.

Bridges, Culverts and Viaducts.

Fla., Jacksonville.—Duval County Comms., Frank Brown, Clk., will refloor bridge over McGirts Creek; invites bids.

Fla., Jacksonville.—City Comsn. will construct Lee St. viaduct; low bidder, Mills Engineering Construction Co., McComb, Miss., at \$280,119.80; F. M. Edwards, City Engr., Jacksonville. (Lately noted inviting bids.)

Fla., Miami.—City rejected bids on building bridge over Miami river at Avenue G; Harrington, Howard & Ash, Const. Engr., Jacksonville, Fla.; Chas. W. Murray, City Engr., Miami. (Lately noted inviting bids.)

Ga., Colquitt.—Miller County Comms., Roads and Revenues, W. C. Dancer, Chrmn., will build reinforced concrete deck girder bridge over Spring Creek; 500 ft. long; \$55,000; A. E. Ittner Co., Contr., Albany, Ga.; E. Jack Smith, Div. Engr., Thomasville, Ga. Lately noted inviting bids. (See Machinery Wanted—Mixer; Hoist; Pump; Piling.)

Ga., Columbus.—City will build reinforced concrete bridge over Chattahoochee River at 14th St. crossing; vote Mar. 1 on \$180,000 bonds. Address The Mayor. (Supersedes recent item.)

Ga., Morgan.—Calhoun County Comms. will construct 390-ft. bridge in Calhoun County; reinforced concrete; \$50,000; Columbus Construction Co., Contr., Columbus, Ga.

La., Jena.—La Salle Parish Police Jury will build steel bridges; 14 to 90-ft. spans, 15-ton steel on concrete; \$45,725; Vincennes Bridge Co., Contr., Vincennes, Ind.; James A. McConnell, Engr., Jena, La. (Lately noted inviting bids.)

Md., Baltimore.—Public Improvement Comsn. has commenced work on Chase St. viaduct, to be almost entirely rebuilt and steel work reinforced; floor replaced with reinforced concrete paving and sidewalks of same material; bridges over railroads in Fallsay and Jones Falls cut will be repaired; work on new bridge carrying Windsor Mill road over Gwynns Falls Valley that started some months ago has advanced rapidly; structure is to be single high sweeping arch with 80-ft. span; 2 abutments of heavy reinforced concrete have been completed and 2 sections of arch about half finished; 2 heavy ornamental balustrades of same material as bridge will be built along sides and 2 rows ornamental

lights borne on high iron columns will furnish illumination; \$26,000,000 available from public improvement loan. (Lately noted.)

Miss., Canton.—State Highway Dept., Jackson, Miss., will build steel bridge over Doaks Creek and grade 9.8 mi. road; Geo. R. Stroud, Contr., Pickens, Miss. (Lately noted inviting bids.)

N. C., Ashboro.—State Highway Comsn., Greensboro, N. C., will build bridges and culverts in Randolph County; F. A. No. 101-B; bids until Jan. 25. Lately noted. (See Machinery Wanted—Bridge Construction.)

Okla., Vinita.—Craig County Comms. will construct 13 bridges; \$40,000; will invite bids; Geo. Ashby, County Engr.

S. C., Beaufort.—Beaufort County Supvrs., W. F. Sanders, County Supvr., will reconstruct bridge over Whale Creek; bids until Jan. 28; Ambrose Harwell, Div. Engr., 39 Broad St., Charleston, S. C. (See Machinery Wanted—Bridge Construction.)

S. C., Gaffney.—Cherokee County Comms., E. F. Lipcomb, Supvr., will build 20 to 25 steel bridges; (See Machinery Wanted—Bridge Materials.)

S. C., Lanes.—Santee Bridge District Commissioners, W. K. McDowell, Chrmn., Charleston, S. C., will construct main spans of steel highway bridge over Santee River between Williamsburg and Berkeley counties; bids until Feb. 17; Ambrose Harwell, Div. Engr., 39 Broad St., Charleston. (See Machinery Wanted—Bridge Construction.)

S. C., Sand Bar Ferry.—South Carolina Highway Comsn., Columbia, S. C., will build bridge across Savannah River; will soon invite bids. Lately noted. (See Machinery Wanted—Bridge Construction.)

Tenn., Bristol.—City will build bridge across Southern Ry. tracks at English St. Address The Mayor.

Tex., Corsicana.—Navarro County, W. E. Slaughter, Auditor, will build trestle across steel bridge on Chambers Creek in Road Dist. No. 1; bids opened Jan. 20. (See Machinery Wanted—Bridge Construction.)

Va., Fincastle.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will build 2 steel and reinforced concrete bridges over Glade Creek on State Road No. 19 in Botetourt County, Virginia Project No. 104; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

Va., Salem.—Virginia State Highway Commission, 116 S. 3d St., Richmond, Va., will build reinforced concrete bridge over Cook's Creek on State Road No. 10 in Roanoke County, Virginia Project No. 104; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

Va., Stafford.—Virginia State Highway Com-

mission, 116 S. 3d St., Richmond, Va., will build steel bridge over Potomac Run with alternate bids on concrete and timber floor, also reinforced concrete bridge over Aconkeek Creek on State Road No. 1 in Stafford County, Virginia Project No. 88; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Bridge Construction.)

W. Va., Charleston.—Chesapeake & Ohio Ry., F. I. Cabell, Ch. Engr., Richmond, Va., contemplates erecting elevated concourse of sufficient width to provide passageway and parking space for 50 automobiles over tracks at South Side Station; large elevated platform of concrete and steel, 60 ft. wide and 500 ft. long; at eastern end approached by driveway 450 ft. long; western end driveway 300 ft. long; \$200,000.

Canning and Packing Plants.

Fla., Jacksonville.—Farris & Co., capital \$100,000, inceptd. with N. E. Farris, Prest., R. E. Farris, V.-P.; Ralph A. Farris, Secy.-Treas.; will construct reinforced concrete plant with daily capacity of 75 to 100 head of cattle and several hundred head of hogs.

Fla., Lowell.—Farmers' Storage & Packing Co., capital \$5000, inceptd. with A. F. Frie-mouth, Prest.; S. F. Rou, V.-P.; J. C. Pfeil, Secy.-Treas.

La., De Ridder.—Chamber of Commerce will organize company to establish canning factory; pack vegetables, especially sweet potatoes.

N. C., Charlotte.—Thomasboro Canning Co., inceptd. by J. E. Thomas, will construct building and install machinery; daily output 3000 cans vegetables.

W. Va., Brosius.—Alpine Orchard & Canning Co., capital \$40,000, inceptd. with C. G. Grove, Prest.; C. E. Alabaugh, Mgr.

Clayworking Plants.

Tenn., Bristol.—Bricks.—Southern Brick Plant, W. A. Mahan, Supt.; improve plant; increase daily capacity from 20,000 to 40,000 bricks.

Coal Mines and Coke Ovens.

Ala., Birmingham.—Export Coal Co., capital \$3000, inceptd. with W. O. Kennedy, Prest.; Frank M. Dixon, V.-P.; Lloyd G. Bowers, Secy.-Treas.

Ala., Oneonta.—Crescent Coal Co. purchased holding of C. R. Middleton; develop; contemplated output 300 tons daily.

Ala., Empire.—Empire Coal Co., capital \$2,500,000, organized with Walter Moore, Prest., Birmingham, Ala.; purchased 45,000 acres coal land; will develop; absorbed properties of old Empire Coal Co., Panama Coal & Iron Co. and coal lands owned by Walter Moore; contemplates building mining town. (Lately noted to expend \$971,940 in coal-mine development.)

Ala., Mobile.—Zimmern's Coal Co., capital \$200,000, inceptd. with Samuel Zimmern, Prest.-Gen. Mgr., Mobile, Ala.; J. A. Davison, Secy., Pensacola, Fla.

Ky., Lennut.—Number Four Superior Coal Co. will increase capital, open new mines and construct coal tipple; contract let.

Ky., Whitesburg.—Trace Fork Mining Co.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

increased capital from \$100,000 to \$400,000; will improve plant, construct tipples, build miners' houses; increase capacity.

Va., Norfolk.—Central Pocahontas Coal Co. inceptd. with capital \$250,000; Geo. H. Loeb in charge.

W. Va., Accoville.—Deegans Eagle Coal Co. will probably rebuild tipples and powerhouse burned at loss of \$15,000.

W. Va., Beckley.—Ingram Branch Coal Co., C. H. Meade, Pres.; increase capital from \$100,000 to \$1,000,000.

W. Va., Beckley.—Minter Fuel Co. organized with E. C. Minter, Pres.-Mgr.; T. J. McGinnis, V. P.; A. K. Minter, Secy.; G. C. Hedrick, Treas. (Lately noted inceptd., capital \$50,000.)

W. Va., Bluejays.—P. C. Lynch Coal Co.; increase capital from \$200,000 to \$300,000.

W. Va., Boomer.—West Virginia Eagle Coal Co., W. H. Conley, Pres.; increase capital from \$50,000 to \$150,000.

W. Va., Buckley.—Milams Fork Smokeless Coal Land Co., C. H. Meade, Pres.; increase capital from \$150,000 to \$500,000.

W. Va., Charleston.—Fernwood Coal Co., capital \$100,000, inceptd. by C. T. Smith, J. D. Wygal, both Charleston, W. Va.; W. P. Man-kin, Ashton, W. Va.

W. Va., Charleston.—Coal River Fuel Co., 1012 Virginia St. (lately noted inceptd., capital \$75,000), organized with G. A. McQueen, Pres.; J. A. Kennedy, Secy.-Treas.; develop 13,000 acres land, 3000 of which is oil producing; daily output 100 tons coal.

W. Va., Dana.—Chester Coal Co. inceptd. by Peter J. McEntee, T. A. Borradaile and Oakley B. Robertson, all of South Charleston, W. Va.

W. Va., Fayette County.—Oakland Coal Co., capital \$1,000,000, inceptd. by J. V. Abbot, W. F. Foster, Charles Hodges; all Fairmont, W. Va.

W. Va., Fairmont.—Pecks Run Coal Co., F. J. Foye, Pres.; increase capital from \$25,000 to \$200,000.

W. Va., Fairmont.—Edward Hines, Chicago, Ill., will develop 600 acres coal land; sink one or more shafts.

W. Va., Fairmont.—Pine Bluff Coal Co., E. T. Kelly, Pres.; increase capital from \$100,000 to \$200,000.

W. Va., Greenbrier County.—Ross Smokeless Coal Co. inceptd. by J. J. Ross, H. A. McAllister, J. R. Slack, all Logan, W. Va.

W. Va., Harford.—Carver-Fork Colliery Co., P. E. Hyer, Pres.; increase capital from \$25,000 to \$50,000.

W. Va., Logan.—Donald Coal Co., Fred. Haislip, Pres.; increase capital \$50,000 to \$100,000.

W. Va., Lowville.—Hite-Barnes Coal Co. will erect coal tipples.

W. Va., Marion County.—Helen's Run Collieries Co., capital \$25,000, inceptd. by W. W. Simpson, G. K. Rodgers, both Mt. Clair, W. Va.; E. M. Ryan, Brownville, Pa.

W. Va., Morgantown.—Whyel Coal Co., Uniontown, Pa., has acquired 217 acres coal land; will develop.

W. Va., Preston County.—Pleasantdale Coal Co., capital \$100,000, inceptd. by Salvatore Mascioli, Nick Patt, Domenico Lippucci, all Morgantown, W. Va.

W. Va., Sutton.—Pittsburgh Summit Coal Co., C. C. Davis, Pres.; increase capital from \$75,000 to \$100,000.

W. Va., Tralee.—Raleigh Fire Creek Coal Co., capital \$1,000,000, inceptd. by J. C. Sullivan, J. F. Flanagan, both Tralee; K. S. McClanahan, Amigo, W. Va.

W. Va., Vivian.—Peerless Coal & Coke Co. will probably rebuild commissary burned at loss of \$65,000.

W. Va., Webster County.—Elk Smokeless Coal Co., capital \$50,000, inceptd. by W. H. Odell, J. D. Rake, both Richmond, W. Va.; A. F. Holden, Centralia, W. Va.

W. Va., Wheeling.—Chesapeake Coal Co., T. H. Johnson, Pres.; increase capital from \$150,000 to \$200,000.

W. Va., Williamson.—Kirkland Coal Co., S. H. Goodloe, Jr., Pres.; increase capital from \$10,000 to \$50,000.

W. Va., Williamson.—R. G. Bailey Coal Co., capital \$100,000, inceptd. by W. J. Bailey, H. H. Randolph, C. A. Hammond.

Concrete and Cement Plants.

Ark., Nashville.—P. C. Allen interested in organizing \$1,000,000 company to establish cement plant.

Ga., Alton.—A. H. & K. M. Johnson will rebuild cotton ginney burned at loss of \$10,000.

Va., Richmond.—Agricultural Supplies.—Agricultural Supply Corp., capital \$50,000, inceptd. with F. M. Bunch, Pres.; L. B. Enslow, Secy.

Va., Roanoke.—Cement Products.—Cementile Products Corp., capital \$50,000, inceptd. with M. M. Caldwell, Pres.; Geo. W. Chaney, Secy.

Va., Roanoke.—Roanoke Cement Tiling & Roofing Co. will probably rebuild portion of plant damaged by storm; loss \$5000.

W. Va., Wheeling.—Concrete Blocks, etc.—Concrete Products Co. will erect 2 room addition to plant, contemplated.

Cotton Compresses and Gins.

Ala., Cedar Bluff.—T. L. Lassaffer & Co. will probably rebuild cotton gin burned at loss of \$11,000.

Ala., Cedar Bluff.—T. L. Lasseter & Co. will probably rebuild cotton ginney burned at loss of \$110,000.

Okla., Lawton.—Geo. E. Young will probably rebuild cotton ginney burned at loss of \$40,000 to \$45,000.

S. C., Cheraw.—J. B. Bundy will probably rebuild burned ginney.

Tex., Miles.—Farmers' Gin Co., capital \$17,200, inceptd. by M. B. Farmer, I. E. Hart, J. S. Holland.

Drainage Systems.

Fla., West Palm Beach.—Palm Beach Drainage & Highway Dist., J. B. Jeffries, Chrmn., Miami, Fla., will issue \$500,000 bonds for 3 years each to reclaim 341,000 acres along south shore of Lake Okeechobee; F. C. Elliott, Ch. Engr.

Tex., El Paso.—El Paso County Conservation Dist. No. 2 let contract to Jennings Construction Co. at \$125,000 to drain alkali lands in Terrell Dist.

Electric Plants.

D. C., Washington.—Provident Service Co., capital \$300,000, inceptd. by Harry S. True, Harry B. Howe, G. J. Blesell.

Fla., Fernandina.—City will construct improvements to municipal light and water plant. Address The Mayor.

Fla., Pompano.—Pompano-by-the-Sea Co., A. T. Birkdull, Secy., 29 N. E. 2d Ave., Miami, Fla., will install electric and water plant. (See Land Developments.)

Fla., Safety Harbor.—Town Commrs. ordered vote on \$10,000 bonds to purchase and establish electric light plant.

Ky., Whitesburg.—W. C. Daniel & Son will construct 1-story power plant; brick.

Md., Baltimore.—Consolidated Gas, Electric Light & Power Co., E. D. Edmonston, Gen.

Supt., Lexington Bldg., plans erection 1-story concrete construction power-house addition; A. Z. Lozeaux, Engr.

Miss., Jackson.—City, W. A. Scott, Mayor, votes Jan. 15 on \$1,000,000 bonds for constructing, erecting, purchasing, operating, improving and extension of electric railway, lighting plant, electric power and gas plants.

Miss., Lexington.—City will install electric light system, material purchased; J. D. Alsbury, in charge.

Mo., Fulton.—City will improve and enlarge light and water plant; contemplates \$75,000 bond issue. Address The Mayor. (Lately noted.)

S. C., Charleston.—C. W. Parks, Chief Bureau Yards and Docks, Navy Dept., Washington, D. C., will improve boiler plant; Carroll Electric Co., 714 12th St. N. W., submitted bids.

Tenn., Friendship.—Marvel Milling Co. will probably rebuild light plant and flour mill burned at loss of \$10,000.

Tenn., Germantown.—Town contemplates installing light and water plant; will issue bonds; Gaines & Carlisle, Engrs.-Archts., 206 Falls Bldg., Memphis, Tenn.

Tenn., Wales.—International Agricultural Corp. let contract to Frakes Bros., Electrical Engrs., Columbia, Tenn., to electrify plant; cost \$300,000; construct 20 mi. 3-phase, 6600-volt, 60-cycle transmission line; wires for electric trams; erect high-tension wires, transformers, etc.; develop 950 H. P.; J. A. Barr, Engr., Mt. Pleasant, Tenn. (Supercedes recent item.)

Tex., Coleman.—City contemplates remodeling and improving electric light plant. Address The Mayor.

Tex., Forest Hill.—Forest Hill Water, Light & Fuel Co., capital \$8900, inceptd. by Everett Cain, J. A. Todd, L. T. Jordan.

Tex., Houston.—Lucey Mfg. Corp. will probably rebuild power-house burned at loss of \$4000.

Fertilizer Factories.

S. C., Chester.—S. M. Jones Co., will increase capital from \$55,000 to \$100,000.

Va., Ellerson.—Alliance & Industrial Union Mfg. Corp. organized with W. E. Reese, Pres.-Treas.; B. C. Garrett, V. P.; I. S. Dodson, Secy.; B. L. Quarls, Mgr.; will erect 50x150-ft. building; daily capacity 50 tons fertilizer. (Lately noted under Va., Richmond, inceptd., capital \$50,000.)

Flour, Feed and Meal Mills.

Ark., Hoxie.—Arkansas Mill & Grain Co., capital \$100,000, organized with P. H. Schwegman, Pres.; C. C. Cherry, V. P. and Mgr.; J. W. Pace, Secy.-Treas.; purchased building. (See Machinery Wanted—Feeds, etc.)

Okla., Durant.—Durant Milling Co., consolidation of Durant Milling Co. and Durant Grain & Elevator Co., inceptd. with \$250,000 capital.

Okla., Yukon.—Yukon Mill & Grain Co., capital \$1,200,000, inceptd. by J. F. and F. L. Krouth, A. F. Dorby.

S. C., Cherokee.—C. H. Smith, Townville, S. C., purchased mill; will improve plant and install machinery; J. A. Smith, Mgr.

Tenn., Friendship.—Marvel Milling Co. will probably rebuild flour mill and light plant burned at loss of \$10,000.

Tex., Cisco.—Cisco Grain & Elevator Co., capital \$15,000, inceptd. by H. J. and Thelma Bradfish, F. E. Allen.

W. Va., Charleston.—West Charleston Feed Co. will probably rebuild plant burned at loss of \$3000.

Foundry and Machine Plants.

Ala., Birmingham—Foundry.—Southern Type Foundry, capital \$25,000, inceptd. with F. S. Hammill, Prest. and Treas.; W. R. Smith, V.-P., and E. Snow, Secy.

Fla., Tampa—Boilers.—Florida Steam Power Co., capital \$200,000, inceptd. with John A. Bishop, Prest.; H. H. Dupont, V.-P.; Fred. M. Gerner, Secy.; Leroy Bishop, Treas.

Ga., Atlanta—Machine Shop.—General Electric Co. will erect first unit of machine shop; 1 story; 50x200 ft.; E. Vogle, Ch. Engr.

Md., Baltimore—Ice Machines, etc.—Ottenheimer Bros., 415 N. Howard St., capital \$600,000, inceptd. by Bernard M., Saml. M. and Reuben E. Ottenheimer.

Md., Baltimore—Type Machines.—Carter Type Machine Co. Industrial Bldg., organized with Nat B. Keen, Prest.; Philip J. Scheck, V.-P.; Joseph L. McAllister, Secy.-Treas.; James T. Carter, Gen. Mgr. (Lately noted inceptd., capital \$500,000.)

Tenn., Martin—Implements.—Martin Grain & Implement Co. increased capital from \$20,000 to \$50,000.

Tex., Amarillo—Threshers.—Gruber Threshing Machine Co. inceptd. with P. E. Gruver, Prest.; A. B. Seanor, Secy.-Treas.; contemplates erecting plant to mfr. threshing machines.

Tex., Dallas—Metal Castings, etc.—General Mfg. Co., 210 Deere Bldg., capital \$15,000, organized with John G. Jester, Prest.; Gus Diamond, V.-P.; P. B. Arrington, Secy.-Treas.

Tex., El Paso—Steel Products.—Steel Products Corp., capital \$100,000, inceptd. by J. H. Sanford, Jr., E. L. Fugate, both El Paso; Arthur W. Britton, New York.

Tex., Houston—Oil-well Supplies.—Lucey Mfg. Corp. will probably rebuild forge and boiler shops burned at loss of \$10,000.

Va., Lynchburg—Grates.—Simmons Mfg. Co., Wilmington, N. C. organized with S. Mitchell, Prest.; Chas. E. Hooper, V.-P.; Percy W. Wells, Secy.-Treas.; acquired plant of Lynchburg Electric Foundry; mfr. grates for locomotives and stationary steam-engine boilers. (Lately noted inceptd., capital \$50,000.)

Va., Portsmouth—Machine Shop.—McEwen Lumber Co. will rebuild machine shop burned at loss of \$35,000.

Va., Richmond—Tanks, etc.—Lewis Construction Co., capital \$10,000, inceptd. with Irving J. Pollock, Prest., Pittsburgh, Pa.; Fred. Lewis, Secy., Richmond.

W. Va., Charleston—Welding, etc.—Charles Machine & Welding Co., capital \$25,000, inceptd. by C. L. Smith, J. E. Fletcher, both Charleston; H. E. Marquis, South Charleston, W. Va.

W. Va., Clarksburg—Tools.—Kerr Tool Co., capital \$60,000, inceptd. by Calvin W. and Dale E. Kerr; both Adamstown, W. Va.; Delbert Baker, Parkersburg, W. Va.

W. Va., Huntington—Frogs, Switches, etc.—H. T. Lambert Co., 1918 First National Bank Bldg., capital \$200,000, inceptd. with H. T. Lambert, Prest.-Mgr.; W. H. Tidman, V.-P.; E. A. Thomas, Secy.-Treas.; erect 60x200-ft. fireproof building; steel construction; cost \$25,000; bids open at once; install \$20,000 mch. for mfr. frogs, switches, etc. (See Machinery Wanted—Foundry Equipment.)

W. Va., Warwood—Steel Stampings.—Ackermann Mfg. Co. improve plant by opening department for mfr. heavy steel stampings; install additional mch.; purchased.

Gas and Oil Enterprises.

Ark., Corning.—Clay County Oil Co. increased capital from \$100,000 to \$200,000.

D. C., Washington.—Washington Gas Light Co. will issue \$2,000,000 bonds for new construction, extensions, additions, betterments and improvements to property heretofore made.

Fla., Arcadia.—Sampson Oil Co., capital \$75,000, inceptd. with C. A. Roe, Prest.; John W. Pelot, Secy.-Treas.; A. P. Hollingsworth, Gen. Mgr.

Fla., Sneads.—West Florida Oil & Gas Co., capital \$50,000, inceptd. with W. W. Wester, Prest.; J. W. Gibson, V.-P.; F. P. Stone, Secy.-Treas.

Ga., Atlanta.—Georgia Railway & Power Co. will improve system; install gas pushers, 2 compressors, waste steam boiler and piping; lay additional gas mains; construct combination charging and discharging machine, etc.

Ky., Louisville—Refinery.—Dixie Bell Refinery Co., H. G. Murphy, V.-P. and Gen. Mgr., 105 Intersouthern Life Bldg., will erect 1-story 40x70-ft. refinery; Carl B. Haun, Archt., Blackwell, Okla.

La., Baton Rouge—Storage Tanks.—Standard Oil Co. of Louisiana will erect 18 additional 1,000,000-bbl. capacity storage tanks; will probably let contract to Wightner-Connelly Construction Co., Pittsburgh, Pa. (Lately noted to have increased capital from \$10,000 to \$30,000,000.)

Md., Baltimore.—National Oil Co., Keyser Bldg., contemplates plant addition at Canton.

Md., Baltimore.—Red C Oil Mfg. Co., Keyser Bldg., will install storage and export depot.

Md., Baltimore—Tanks.—Standard Oil Co., Franklin and Commerce Sts.; construct two 35x35-ft. storage tanks; cost \$4328.

Md., Baltimore—Tanks.—Chesapeake Co., American Bldg., will construct oil-storage plant, including two 10,000-bbl. steel tanks; Geo. R. Callis, Jr., American Bldg.

Md., Baltimore—Gasoline Station.—Sherwood Bros. Co., 1907 N. Charles St., will erect gasoline and oil-distribution station.

Miss., Jackson.—City, W. A. Scott, Mayor, vote Jan. 16 on \$1,000,000 bonds for constructing, erecting, purchasing, operating, improving and extension of railway, gas, electric-light and electric-power plants.

Okla., Clinton.—Consumers' Lubricating Co., capital \$20,000, inceptd. by C. M. and G. M. McGrady, both Elk City, and W. L. Crow, Tulsa.

Okla., Enid.—Dorothy Oil Co., capital \$50,000, inceptd. by W. A. Mill, E. J. Musmore, M. N. Brown.

Okla., Garber.—Big Pool Oil Co., capital \$75,000, inceptd. by Hiram and Owen Stam, both of Garber, and J. H. Stam, Norwich, Kans.

Okla., Kaw City.—City will construct and equip natural-gas system; voted \$16,800 bonds. Address The Mayor.

Okla., Newkirk.—City contemplates establishing gas system. Address The Mayor.

Okla., Oklahoma City.—Black Panther Oil Co. increased capital from \$100,000 to \$1,000,000.

Okla., Tulsa.—Ace Drilling Co., capital \$10,000, inceptd. by E. F. Blanchard, R. O. Bailey, Ira Short.

Okla., Tulsa.—Humphreys Texas Co., capital \$5,000,000, inceptd. by John B. Means, M. Alch, H. A. Weigle.

Oklahoma.—Wash.-Okla. Oil & Gas Co., capital \$300,000, inceptd. by Thos. F. Edmunds, J. Walter O'Boyle, Raymond B. Dickey; all Washington, D. C.

Tex., Breckenridge.—Brooks-Wofford Production Co., capital \$125,000, inceptd. by C. W. Brooks, Ben. Wofford, A. J. O'Brien.

Tex., Dallas.—Bernie Oil Co., capital \$150,000, inceptd. by Sol. Dreyfuss, L. M. Herman, J. M. Averbook.

Tex., Houston.—Old Dominion Oil Co. will increase capital from \$50,000 to \$2,000,000. (Lately noted inceptd.)

Tex., Houston.—Wilson Supply Co., capital \$50,000, inceptd. by W. D., T. W. and E. C. Wilson.

Tex., Ranger.—Casing-Head.—Chestnut & Smith, Thos. Smith, Prest., Tulsa, Okla., will establish casing-head gasoline plant, daily capacity 4500 gals.

Tex., Rockdale.—J. W. Kemp, Dallas, Tex., and Wm. J. Nert, Fort Worth, Tex., have acquired 1500 acres in Rockdale Tracy field; will construct 2-in. pipe line; reported.

Tex., San Antonio.—Alum Creek Oil Co. will increase capital from \$100,000 to \$250,000.

Tex., South Bend.—South Bend Oil Co., capital \$350,000, organized with Julian B. Hedrick, Prest., California; Marshall Spoons, V.-P.

Tex., Toyah.—Refinery.—Toyah Oil & Refinery Co., capital \$30,000, organized with Jess Knight, Prest.; A. A. Stanton, V.-P., E. B. Daniel, Treas.; J. F. Lawney, Secy.; acquired Panhandle Light & Power Co.'s refinery.

Tex., Wichita Falls.—Chas. F. Noble Gasoline Co. will probably rebuild plant damaged by explosion.

W. Va., Charleston.—Coal River Fuel Co., 1012 Virginia St., organized with G. A. McQueen, Prest.; J. A. Kennedy, Secy.-Treas.; develop 3000 acres of oil-producing land.

W. Va., Huntington—Ralls, etc.—H. T. Lambert Co., capital \$200,000, inceptd. by H. T. Lambert, W. H. Tidman, E. A. Thomas.

W. Va., Huntington—Machine Shop.—Brown Flint Range Co., capital \$250,000, inceptd. by M. E. Brown, J. G. Miller, Chas. S. Porter.

W. Va., Huntington.—Jeff Newbury Oil & Gas Co., capital \$50,000, inceptd. by W. H. Cox, Owen Bartram, both Huntington; T. P. Meade, Flat Gap, Ky.

W. Va., Putman County.—Parkins Oil & Gas Co., capital \$50,000, inceptd. by O. B. Parkins, Harry E. Eastwood, A. G. Thompson, all Charleston, W. Va.

Hydro-Electric Plants.

Ala., Bellwood.—City plans voting on \$750,000 bonds for developing waterpower site on Cheetawatchie river. Address The Mayor.

Va., Petersburg.—Chesterfield Mfg. Co., J. F. Taylor, Prest., will construct electric-power plant to furnish light and power for present mill and new and larger mill to be built this year; completed concrete dam costing about \$75,000.

Ice and Cold-Storage Plants.

Ala., Birmingham.—Rushton Corp. purchased property of Alabama Packing Co.; will remodel for ice plant.

Ala., Dothan.—R. M. Page, Chiepley, Fla., contemplates establishing cold-storage plant.

Fla., St. Petersburg.—Williams-Beers Ice Co., Horace Williams, Prest., let contract to Bryan & Snyder to erect ice plant with daily capacity of 35 tons; mch. purchased. (Lately noted.)

Ga., Atlanta.—Marshall's Pharmacy let contract to Dixie Engineering & Insulating Co. to install compressor, direct expansion freezer, hardening-room and milk cooler.

Md., Pocomoke City.—Peninsular Storage Co. will erect 1-story 100x240-ft. cold-storage plant; concrete and brick construction; James S. Nussner and C. E. Painter, Archts., 324 N. Charles St., Baltimore, Md.

Miss., Shubuta.—Shubuta Ice Factory, T. M.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

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Spinks, Propr., will remodel and enlarge Ice plant to mfr. raw-water ice; operate by water-power; install 5-ton freezing tank and ice-cream equipment. (See Machinery Wanted, Tank.)

Tex., Hillsboro.—Shear Co. will erect \$20,000 cold-storage plant with 5 carload capacity.

Tex., Stephenville.—Stephenville Ice Co. remodel plant, will install high-pressure boilers, engine, etc.

W. Va., Kenova.—Kenova Ice & Cold Storage Co., capital \$50,000, inceptd. by A. E. Booth, J. Miller Jackson, both Kenova; S. P. Ferguson, Prichard, W. Va.

Irrigation Systems.

Tex., San Angelo.—Colorado Valley Irrigation Assn., Stuart L. Williams, Secy., formed plans for building irrigation project to irrigate 500,000 acres in valley Colorado River; cost \$8,000,000.

Land Developments.

Ala., Decatur.—City, Jas. Wilson, Mayor, contemplates issuing park and street bonds. (Lately noted.)

Fla., Bradentown.—Myakka Farms Co. organized with Frank E. Knox, Pres.; W. H. Tucker, Secy.-Treas. (Lately noted inceptd. with \$30,000 capital.)

Fla., De Soto City.—De Soto City Groves Co., capital \$30,000, inceptd. with David C. Barrow, Pres.; E. J. Etheridge, Secy.-Treas.

Fla., Miami.—Cocoanut Grove Realty Co., capital \$100,000, inceptd. with R. D. Bardine, Pres.-Treas.; R. J. Logan, Secy.

Fla., Miami.—Fort Dallas Realty Co., capital \$15,000, inceptd. with W. C. Bullen, Pres.; T. W. Palmer, V.P.; John N. Bullen, Secy.-Treas.

Fla., Pompano.—Pompano-by-the-Sea Co., 29 N. E. 2d Ave., Miami, Fla., organized with J. W. Bullock, Pres.; H. N. Pitt, V.P.; A. T. Barkdull, Secy.; will develop 80-acre site; install electric and water plant and construct roads. (Lately noted inceptd., capital \$12,000. (See Machinery Wanted—Water and Electric Plant.)

Fla., Quincy.—J. T. Budd, Jr., & Co., capital \$100,000, organized with I. Gardner, Pres.; J. T. Budd, Jr., V.P.; Jos. Wedeles, Secy.-Treas.; will cultivate 50 acres in shade-grown tobacco; erect 2 barns and tenant-houses.

Fla., Tallahassee.—Allapattah Building & Realty Co., capital \$10,000, inceptd. with Adam W. Oberlin, Pres.; Chas. P. Taylor, V.P.; John P. Spiller, Secy.-Treas.

Fla., West Palm Beach.—City will purchase site to develop for park; vote Feb. 1 on \$50,000 bonds. Address The Mayor.

La., Baton Rouge.—Rose Lawn Development Assn., capital \$100,000, inceptd. with A. Grouchy, Jr., Pres.; Geo. P. McNeal, V.P.; John A. De Jong, Secy.; Chas. M. Downs, Treas.

Tex., Brownsville.—Naranja Improvement Co. inceptd. by Paul E. Vasher, J. H. Cowan, Lee Peters.

Tex., Fort Worth.—City Commrs. will develop 200 acres of land to be known as Marion Sampson Park.

Tex., Frisco.—Bethel Cemetery Assn. inceptd. by W. B. Soms, F. P. Shrader, A. P. Rogers.

Tex., Oak Cliff, P. O. Dallas.—Oak Cliff Commercial Assn., L. O. Donald, Pres., interested in purchase of municipal golf links.

W. Va., Huntington.—Holswade Land Co., capital \$150,000, inceptd. by W. G. Holswade, Rudd T. Neel, Wm. J. McGuire.

Lumber Manufacturing.

Ala., Centerville.—W. L. Pratt will probably rebuild saw and heading mill burned at loss of several thousand dollars.

Fla., Arcadia.—Russ Lumber Co., Brownsville, Fla., reported to establish plant with daily capacity of 40,000 ft.

Fla., Westville.—C. W. Rich will probably rebuild sawmill burned at loss of \$2500.

Fla., Williston.—Domestic Lumber Co., capital \$25,000, inceptd. with J. R. Paslay, Pres.; T. L. Williams, V.P.; A. G. Pickett, Secy.; J. J. Upchurch, Jr., Treas. (Lately noted.)

La., Natchitoches.—Natchitoches Lumber Co. will probably rebuild plant burned at loss of \$50,000.

Miss., Jackson.—Natchitoches Lumber Co. acquired interests of Gammill Lumber Co., including plant site and 1,000,000,000 ft. of stumpage.

S. C., Columbia.—Kennon Lumber Co. increased capital from \$25,000 to \$50,000.

Tenn., Chattanooga.—Blair Lumber Co. changed name from Loomis & Hart Lumber Co.

Tex., Ft. Worth.—Sloan Lumber Co., capital \$125,000, inceptd. with Walter B. Sloan, Pres. and Gen. Mgr.; A. B. Sammons, Secy.

Tex., Wichita Falls.—Linn Boyd Lumber Co. will probably rebuild warehouse, lumber shed and office buildings; burned at loss of \$25,000.

Va., Abington.—Kimberling Springs Land & Timber Co., inceptd. with \$100,000 capital.

W. Va., Elkins.—Kerens Lumber Co. purchased timber land; will develop.

W. Va., Kendalia.—O. D. Hill will probably rebuild sawmill burned at loss of \$6000.

W. Va., Paw Paw.—Modern Investment & Improvement Co., V. H. Cazer, Pres., Martinsburg, W. Va., let contract to M. Cox to mfr. and deliver products at railroad points near Paw Paw and Magnolia, W. Va.; mfr. crossties and mine props; install sawmills; erect bunkhouses and cook shacks. (Lately noted to develop 1700 acres timber land.)

Metal-Working Plants.

Okl., Oklahoma City.—Screens.—Gold King Screen Co., capital \$150,000, inceptd. by G. W. Caldwell, Willis Gregory, Cody Fowler.

Mining.

Ala., Gadsden.—Iron.—Alabama Co. has obtained six months' option on Hammond property; will develop iron ore.

Miscellaneous Construction.

Ala., Mobile.—Coal Terminals.—War Dept., W. D. Connor, Ch. Waterways Div., Washington, D. C.; plans are completed for construction of \$400,000 Government coal terminal; invite bids until Feb. 1. (Lately noted let contract to J. A. Gilbert for driving test piles and setting up test borings for coal terminal on Blakeley's Island.)

Ark., Texarkana.—Levee.—Levee Dist. No. 2, Miller County; construct loop levee around Scott Lake, strengthening 9 mi. levee from Buzzards Bluff to Garland; bids opened.

Fla., Fernandina.—Coaling Station.—Florida Terminal Co. contemplates constructing coaling station.

Ga., Atlanta.—Memorial Arch.—City will erect memorial arch in Grant Park costing \$50,000; limestone or granite construction; John Francis Downing, Archt., Flatiron Bldg. (Lately noted contemplated.)

Ga., Columbus.—Swimming-pool.—War Department, Washington, D. C., appropriated \$4000 for construction of swimming-pool at Camp Bennings; Col. Jones, Camp Quartermaster.

La., Alexandria.—Levee.—Red River, Atchafalaya and Bayou Levee Board let contract to L. B. Constant to construct 8500 cu. yds.

levee, known as Selp levee; Gervais Lombard, Asst. State Engr.

Md., Baltimore.—Harbor Development.—Port Development Comsn., J. E. Greiner, Chmn., Fidelity Bldg.; tentative plans for development of Municipal Belt Line Railway in connection with port and harbor improvements being made; Bancroft Hill, Harbor Engr.

Tex., Beaumont.—Municipal Wharves.—City, A. B. Steinhagen, Mayor, will construct municipal wharves, cost \$500,000; O. A. Seward, Engr. (Lately noted voted bonds.)

Tex., Matagorda.—Seawall.—Matagorda Precinct No. 2, W. E. McNabb, Commr., contemplates constructing seawall.

Va., Lambert's Point.—Pier Improvements.—Norfolk & Western Ry., J. E. Crawford, Ch. Engr., Roanoke, Va., let contract to J. P. Pettyjohn, Lynchburg, Va., at \$60,000 to build an apron and lay tracks along one side of pier.

Va., Petersburg.—Flume.—War Dept., Newton C. Baker, Secy., Washington, D. C., let contract to George, Hankins & George, Richmond, Va., to construct concrete flume across Appomattox River.

Va., Norfolk.—War Dept., U. S. Engrs., Washington, D. C.; construct additional dredging in Norfolk Harbor; 3 short sections at different points, as follows: Inner harbor of Lamberts Point and point east of Craney Island, about 12,000 ft. in length; end of channel at Hampton Roads, 540,000 cu. yds. earth removal; bids until Feb. 7; J. C. Oaks, Engr. in charge.

W. Va., Wheeling.—Coal Terminals.—Richland Coal Co. and subsidiary companies, J. C. McKinley, Pres., improve terminal facilities.

Miscellaneous Enterprises.

Ala., Birmingham.—Mail Service.—Wallace Caldwell, Pres. of \$100,000 company to establish air mail service between Birmingham and Chicago, Ill.

Ala., Eutaw.—Laundry.—E. H. Anderson interested in establishing steam laundry for population of 2500 people. (See Machinery Wanted—Laundry Machinery.)

Ark., Little Rock.—Road Signs.—Good Roads Service Co., capital \$10,000, inceptd. by Daniel G. O'Connell, L. H. Theobald, W. W. Shepherd.

Fla., Brooksville.—Publishing.—Star Publishing Co., capital \$10,000, inceptd. with A. Keathley, Pres.; P. L. Weeks, V.P.; J. G. Henning, Secy.-Treas.

Fla., Jacksonville.—Contracting.—G. W. Hessler, capital \$25,000, inceptd. with G. W. Hessler, Pres.; Jos. Zapf, V.P.; A. E. Hessler, Secy.-Treas.

Fla., Jacksonville.—Transportation.—Randolph Motor Transportation Co., capital \$50,000, inceptd. with D. C. Randolph, Pres.; R. W. Randolph, Secy.-Treas.

Fla., Port Tampa.—Phosphate Elevator.—Atlantic Coast Line R. R., J. E. Willoughby, Ch. Engr., Wilmington, N. C., let contract to C. W. Hunt Engineering Corp., 143 Liberty St., New York, to construct 420 ft. phosphate elevator and install mch.; concrete and steel construction, costing \$300,000; capacity 500 tons phosphate per hour; J. W. Morris, Gen. Agt. (Supersedes recent item.)

Fla., Tallahassee.—Publishing.—North Florida Publishing Co., capital \$200,000, inceptd. with T. J. Appleyard, Pres.-Treas.; Paul S. Appleyard, V.P. and Gen. Mgr.; J. P. Clarkson, Secy.; contemplates establishing paper warehouse and supply depot.

Ga., Griffin.—Laundry.—Spalding Laundry Co., capital \$10,000, inceptd.; L. T. W. M. and W. E. Pharr.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Md., Baltimore—Construction, etc.—Baltimore Construction & Supply Co., 610 N. Calvert St., increased capital from \$10,000 to \$50,000.

N. C., Charlotte—Contracting.—Blythe Bros., capital \$100,000, inctpd. by F. J. and J. L. Blythe, R. N. Howard.

N. C., Charlotte—Laundry.—Union Laundry Co., E. R. Faires, Prop., 315 E. Vance St.; W. M. Sullivan, Secy.-Treas., 209½ W. 4th St.; erect 50x120-ft. laundry building costing \$5000; brick and steel frame construction; cement and maple floor; composition roofing; construction by day labor. (Previously noted.)

Okla., Norman—Cleaning.—Jack Bowers Cleaning Co., capital \$25,000; inctpd.; Jack and Beryl Bowers, Cecil Alberty.

Okla., Oklahoma City—Cleaning.—Universal Cleaning Co. will repair brick building, costing \$10,000.

S. C., Charleston—Dry Cleaning.—Hatchel Dry Cleaning Co., capital \$10,000, inctpd. with G. H. Hatchel, Prest.; W. W. Litch, Secy.-Treas.

S. C., Charleston—Greenhouse.—Charleston Floral Co., 57 Broad St., Robert Millican, Prest.-Mgr., has greenhouse and one work shed; will enlarge as needed. (Lately noted inctpd., capital \$100,000.)

S. C., Columbia—Printing.—R. L. Bryan Co., T. S. Bryan, Prest.-Treas., will erect 2-story brick building; mill construction; C. C. Wilson, Archt. (Lately noted, under Miscellaneous Factories, increased capital to \$100,000.)

S. C., Summerton—Hardware.—Clarendon Hardware Co., capital \$10,000, inctpd. with H. G. Tisdale, Prest.; H. E. McElveen, V.-P.; L. L. Hinson, Secy.-Treas.

Tex., Breckenridge—Laundry.—Union Laundry Co., capital \$25,000, inctpd. by V. J. and M. J. Dawson, C. V. Welch.

Tex., Clarksville—Potato Curing.—Clarksville Sweet Potato Curing Co., capital \$12,000, inctpd. by C. C. Smith, Albert Wooley, J. F. Kunkle.

Tex., Fort Stockton—Printing.—Pioneer Printing Co. increased capital from \$4500 to \$5000.

Tex., Fort Worth—Contracting.—Farmers' & Mechanics' Building Co., capital \$1,000,000, by J. T. Pemberton, G. E. Cowden, B. H. Martin.

Tex., Hearne—Hardware.—Allen Hardware Co., capital \$30,000, inctpd. by R. C. Allen, W. W. Woodson, A. D. Sanford.

Tex., Houston—Hotel Supplies.—Texas Hotel Supply Co. increased capital from \$50,000 to \$130,000.

Tex., Luling—Potato Curing.—City is interested in establishment of 5000-bu. capacity sweet-potato curing plant. Address The Mayor.

Tex., Pharr—Laundry.—Valley Laundry Co., Dave Silmons, Mgr., will probably rebuild laundry; burned at loss of \$40,000.

Tex., Van Horn—Ranch.—Delaware Mountain Ranch Co., capital \$125,000, inctpd. by J. T. Pemberton, G. E. Cowden, B. H. Martin.

Tex., Wichita Falls—Incinerator.—City, C. B. Cline, Mayor, let contract for the construction of 40-ton incinerator costing \$25,500. (Previously noted voted \$25,000.)

Va., Charlottesville—Laundry.—Home Laundry Co., capital \$25,000, inctpd., with Webb Minor, Prest.; E. N. Vest, Secy.

Va., Danville—Publishing.—Register & Bee Publishing Plant, R. A. James, Propr., will erect 2 story and basement 53x100-ft. building; reinforced concrete, fireproof construction costing \$75,000 to \$85,000; open bids March 1. (Lately noted burned.)

Va., Norton—Contracting.—Scotribber Corp., capital \$100,000, inctpd., with Garrett W. Scott, Prest., Big Stone Gap, Va.; W. P. Beverly, Secy., Norton.

Va., Norfolk—Ship Chandlers.—Universal Ship Supply Co., capital \$50,000, inctpd., with J. A. Garcia, Prest.; P. Astarbi, Secy.

W. Va., Wellsburg—Publishing.—Wellsburg Herald Publishing Co., capital \$25,000, inctpd. by H. C. Clark, Edward Salade, H. C. Ogden.

W. Va., Welch—Laundry.—P. C. Jacks let contract to H. A. Lucas, Bluefield, W. Va., to construct 51x90-ft. steam laundry, costing \$50,000; fireproof construction, composition roofing, reinforced concrete and maple flooring; Alex. B. Mahood, Archt., Bluefield, W. Va.

W. Va., Welch—Transportation.—Diamond Taxicab & Transfer Co., capital \$25,000, inctpd. by R. Q. Taylor, J. A. Strother, A. P. Painter.

Miscellaneous Factories.

Ala., Birmingham—Creamery.—City Creamery Co., capital \$30,000, inctpd. with Maclin Smith, Prest.-Treas.; M. G. Bardwell, V.-P. and Gen. Mgr.; E. C. Robinson, Secy.

Ala., Mobile—Medicine.—Glen Lax Medicine Co., capital \$20,000, inctpd., with R. D. Benson, Prest.; M. D. Benson, V.-P.

Ala., Mobile—Turpentine.—Stallworth Turpentine Co., capital \$180,000, inctpd. with C. B. Matthews, Prest.; M. C. Stallworth, V.-P.; E. C. Hughes, Secy.-Treas.

Ala., Selma—Creamery.—Purity Creamery Co., S. F. Hobbs Prest. will enlarge and improve plant; will issue \$100,000 bonds.

Ark., Helena.—Merrifield-Lambert & Metz Co., capital \$12,000, inctpd. by Godfrey Merrifield, Irving Metz and J. B. Lambert.

Ark., Littleton.—Glasgow-Baum & Co., capital \$100,000, inctpd. by J. M. Picot, J. R. Glasgow, H. F. Boney.

Ark., Little Rock—Films.—Arkansas Specialty Film Co., 1114 W. Markham St., organized with L. B. Rust Prest.; R. H. Tomlinson, V.-P.; H. E. Dodge, Secy.-Treas. (Lately noted inctpd., capital \$35,000.)

D. C., Washington—Novelties, etc.—Novelty & Specialty Mfg. Co., capital \$10,000, inctpd. by Edwin B. Saulsbury, Geo. Wedderburn, Jas. R. Roberson.

D. C., Washington—Chemicals.—Prophylactic Chemical Co., capital \$200,000, inctpd. by Wm. H. Boyd, Chas. S. Baker, Raymond S. Knapp.

Fla., Daytona—Sugar.—United Sugar Co. plans erection of sugar mill.

Fla., Green Cove Springs—Pulp, etc.—National Pulp & Turpentine Co. will probably rebuild plant burned at loss of \$100,000.

Fla., Jacksonville—Refinery.—L. W. Hagg, care of Everett Hotel, contemplates establishing sugar-cane refinery and mill. (See Machinery Wanted—Refining Equipment.)

Fla., Jacksonville—Paint, etc.—Florida Paint & Cement Co., capital \$20,000, inctpd. with H. A. Wheeler, Prest.; K. R. Paderick, Secy.-Treas.

Fla., Leesburg—Paper and Pulp.—Grass Fiber Pulp & Paper Corp., E. R. Lacey, V.-P., will construct initial plant of pulp mill; main building, 200 ft. long, 80 ft. wide at each end, 40 ft. wide in middle; equip to mfr. paper pulp from saw grass; daily output 50 to 80 tons; total cost, including private railroad and canal to warehouse, \$150,000.

La., Monroe—Carbon.—Hatcher Carbon Co., capital \$500,000, inctpd. by Henry G. Evans, Montgomery, Ala.; Lynn S. Horner, Clarksburg, W. Va.; and C. P. Hatcher, Columbia, Tenn.; leased 910-acre site; will construct carbon-manufacturing and gasoline-extraction plants; total cost \$15,000.

La., New Orleans—Alcohol.—National Brewing Co., C. A. Wagner, Prest., Dorgenois and Gravier Sts., will construct \$100,000 plant, consisting of group of concrete, steel and brick buildings; Sam Stone, Jr., Archt.; O. M. Gwin Construction Co., Contr.

Md., Baltimore—Leather Goods.—Geo. H. Bucheimer, 1000 Rutland Ave., will alter factory; contract let to Borzman Construction Co., 2211 E. Fayette St.

Md., Baltimore—Wines.—Menorah Wine Co., 1231 Culvert Bldg., inctpd. by Jas. O. Preston, Oscar D. Green, Jas. A. Collins.

Md., Baltimore—Clothing.—Winakur Clothing Co., 107 W. Fayette St., capital \$105,000, inctpd. by Elezer Winakur, Jacob I. Hamburger, Hyman Gilik.

Md., Silver Spring—Chemicals.—Richmond Chemical Co., capital \$4800, organized with Wm. H. Thompson, Prest.; M. R. Thompson, Secy.

Miss., Laurel—Print Paper.—L. Grallu contemplates establishing print-paper plant.

Miss., Laurel—Beaver Board.—W. B. Carter contemplates installing plant to mfr. beaver board.

Mo., St. Louis—Shoes.—International Shoe Co. plans increasing capital from \$25,000,000 to \$50,000,000.

N. C., Asheville—Bakery.—Sanitary Baking Co., E. L. Benjamin, Charlotte, N. C., interested, will establish bakery; install \$10,000 machinery.

Okla., Ardmore.—Herren-Sisson Corp., capital \$50,000, inctpd. by S. A. Herron, C. H. Sisson, Jr., Chas. Merz.

Okla., Chickasha—Creamery.—Washita Valley Creamery Co., capital \$50,000, inctpd. by O. J. Hallowell, A. D. Leads, C. C. Steinberger.

Okla., Oklahoma City—Leather.—Oklahoma Leather Co., capital \$30,000, inctpd. by M. Ake F. E. and Frank Northern.

S. C., Greenville—Belting.—Greenville Belting Co. will increase capital to \$50,000.

Tenn., Chattanooga—Clothing.—A. Nash Co., capital \$50,000, inctpd. by Arthur Nash, Cincinnati, O.; establish golden-rule clothing factory. (Lately noted Arthur Nash interested in organizing company.)

Tenn., Nashville—Candy.—Greer & Baxter Candy Corp., capital \$50,000, inctpd. by Melvether L. Baxter, Audley Greer, Elizabeth Sterry.

Tex., Cleburne—Creamery.—Cleburne Creamery, capital \$15,000, organized with J. Griffin High, Prest.-Treas.; St. Hughes, V.-P.; B. Nail, Secy. (Griffin High lately noted proposing construction of \$15,000 creamery.)

Tex., Dallas—Drugs.—Skillern & Sons increased capital from \$60,000 to \$120,000.

Tex., Dallas—Bakery.—Barker Baking Co., 1513 Elm St., will remodel plant.

Tex., Nacogdoches—Mattresses.—Roland Jones contemplates establishing mattress factory. (See Machinery Bedding Machinery.)

Tex., San Antonio—Bottling.—Colonel A. Highball Bottling Co. increased capital from \$20,000 to \$28,000; changed name from Peerless Bottling Co.

Tex., San Antonio—Mattresses.—I. N. L. Mattress Factory, 124 Ganza St., organized with Jas. Kapp, Prest.; H. E. Lockhart, Secy.-Treas.; Benjamin Berger, Mgr.; leased building. (Lately noted inctpd., capital \$3000.)

Tex., Waxahachie—Tailoring.—Bell Tailoring Co. will probably rebuild burned plant.

Va., Alexandria—Chemicals.—Seaboard Chemical Co., inctpd. with Joe V. Morgan, Prest.; Fred. N. Oliver, Secy.

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Va., Alexandria—Chemicals.—Seaboard Chem-
ical Corp., capital \$500,000, inceptd., with Joe
Y. Morgan, Pres.; Fred. N. Oliver, Secy.;
both Washington, D. C.

Va., Bristol—Creamery.—Holston Creamery
Co., C. P. Moore, Pres., increased capital
from \$35,000 to \$50,000; erect building; pur-
chased ice-cream and ice-mfg. machinery;
will install.

Va., Portsmouth—Beverages.—Portsmouth
Beverage Co., inceptd., with J. S. Miller, Pres.

Va., Richmond—Window Products.—Virginia
Window Products Corp. inceptd., with Geo. W.
Lancaster, Pres.; C. B. Haynes, Secy.

Va., Richmond—Rubber Products.—Virginia-
Carolina Rubber Co., Robt. J. Bell, Pres., 10
N. 19th St.; contracts pending for 245x50-ft.
factory of steel unit construction; install fab-
ric-pulling mchys., moulds, presses, cutting
machines to reclaim old junk tires into new
automobile accessories by-products. Lately
net increased capital to \$500,000. (See Ma-
chinery Wanted—Machine-shop Equipment.)

Va., Roanoke.—Coca-Cola Co., G. C. Davis
Mgt., will probably rebuild plant damaged
by storm at loss of \$15,000 to \$20,000.

Va., Roanoke—Paper.—Roanoke Paper Co.,
capital \$50,000, inceptd., with W. L. Wilhelm,
Pres.; H. R. Wilhelm, Secy.

W. Va., Charleston—Drugs.—Standard Drug
Co., capital \$10,000, inceptd., by J. B. Fitch, D. D.
Camp, Walter Jeffers.

W. Va., Morgantown—Mirrors.—Ever Bright
Mirror Co., Arthur Lorent, Pres., will rebuild
plant burned at loss of \$40,000.

Motor Cars, Garages, Tires, Etc.

Ark., Bentonville—Motors.—Doke Motor Co.
will probably rebuild burned building; loss
\$150,000.

Ala., Birmingham—Automobiles.—Alabama
Oldsmobile Co., capital \$75,000, organized with
Robert L. Newman, Pres.-Treas.; J. E. Price,
V.-P.; Thomas B. Stone, Jr., Secy.

Ark., Fort Smith—Tires.—Ever-Ready Tire
Service Co., capital \$700, organized with Claren-
ce Mourning, Pres.; W. B. Hodges, V.-P.;
Frank Hickerson, Secy.-Treas.

Ark., Fort Smith—Motors.—De Jarnette
Motor Co., capital \$50,000, inceptd., with J. J.
De Jarnette, Ona E. De Jarnette, Rutherford J.
Ross.

Fla., Cocon.—Garage.—Indian River Garage,
capital \$25,000, organized with L. S. Andrews,
Pres.; L. B. Hill, V.-P.; C. S. Smith, Secy.-
Treas. (Supersedes recent item.)

Fla., Miami—Automobiles.—Miami Motor
Transportation Co., capital \$10,000, inceptd.,
with Lewis Raquet, W. S. Bergen, B. C. Bull-
man.

Fla., Milton—Automobiles.—Allen-Faircloth
Motor Co., organized, with R. J. Allen, Pres.;
D. Faircloth, V.-P.; T. C. Rozler, Secy., will
erect automobile building; 60x100 ft.; fireproof.
(Lately noted inceptd., capital \$50,000.)

Fla., Orlando—Automobiles.—Walton Buch-
anan, capital \$25,000, organized with E. W.
Buchanan, Pres.-Gen. Mgr.; G. F. Buchanan,
V.-P.; Iona Sheldon, Secy.-Treas.

Ga., Savannah—Motors.—Vinson Motor Co.,
capital \$20,000, inceptd., with C. E. Vinson, L.
B. Vinson, Coleman Fannin.

La., New Orleans—Garage.—Standard Motor
Accessories & Garage Corp., capital \$1,000,000
non-assessable common stock and \$2,000,000 8
per cent bonds, organized, with S. P. Walms-
ley, Pres.; H. M. Moors, V.-P.; Harry W.
Fitzpatrick, V.-P. and Treas.; J. P. O'Leary,
Secy., has building.

Md., Baltimore—Automobiles.—Parkway Au-
tomobile Co., 106 Evans Chapel Rd., capital
\$50,000, inceptd., with Thomas C. Cantville, Lee
B. Johnson, James F. Garbright.

Md., Baltimore—Automobile Bodies.—Shefts
Automobile Body Co., 3 E. Lexington St., capi-
tal \$200,000, inceptd., with R. E. Lee Young,
E. Harvey Peters, Albert K. Sherman.

Md., Baltimore—Police Commr., Room 13,
Courthouse, will alter and erect addition to
garage at Northwestern Police Station, Penn-
sylvania Ave. and Lambert St.; bids until
Jan. 18.

Md., Baltimore—Garage.—National Building
& Supply Co., 210 N. Garrison La., will erect
garage; 1 story, 16x25 ft.; brick; 14 compart-
ments; \$5000.

Mo., Montgomery City.—Hanson Smith will
probably rebuild burned automobile sales
building.

Mo., Montgomery City.—W. H. Blake will
probably rebuild burned garages.

N. C., Charlotte—Tires.—Consumers' Tire &
Supply Co., 323 W. Trade St., increases capi-
tal from \$100,000 to \$100,000.

N. C., Charlotte—Automobiles.—Automobile
Inn, capital \$50,000 inceptd., by A. L. Wiley,
T. S. McIntosh, Lillian Wiley.

N. C., Goldsboro—Garage.—Southern Motor
Co., N. Center St., will probably rebuild
burned garage; loss \$15,000.

Okla., Bigheart—Motors.—Presbury Motor
Co., capital \$50,000, inceptd., with A. W. Bruce,
James M. Carriger; both Bigheart, Okla.; Jas.
A. Presbury, Hominy, Okla.

Okla., Oklahoma City—Trucks.—Marker
Truck & Tractor Co., capital \$15,000, inceptd.,
with J. R. Marker, L. M. Marker, Robert P.
Calvert.

Tenn., Columbia—Automobiles.—Fry Bros.,
capital \$5,000, inceptd., with C. C. Fry, Wm.
M. Fry, John W. Fry.

Tex., Brownsville—Motors.—Dennett Motor
Sales Co., increases capital from \$30,000 to
\$35,000.

Tex., Mission—Motors.—Mission Motor
Sales Co., capital \$15,000, inceptd., with J. M.
Shaver, Logan Duncan, E. K. Johnson.

Tex., Ranger—Garage.—City Garage & Ma-
chine Co., capital \$10,000, inceptd., with R. D.
Lincoln, J. T. Hamess, L. R. Taylor.

Va., Danville—Carroll Tire Co. will prob-
ably rebuild burned building owned by Rorer
A. James; loss \$50,000.

Va., Danville—Automobiles.—Reynolds-
Meador Co., capital \$100,000, organized, with
J. R. Reynolds, Pres.; W. F. Meador, V.-P.;
W. A. Blair, Secy.-Treas.

W. Va., Charleston—Motor Cars.—Motor Car
Supply Co., capital \$150,000, inceptd., with H. F.
Shepherd, W. D. Harold, Geo. D. Cochran,
E. P. Summers.

W. Va., Charleston—Tires, etc.—R. B. Stone
will probably rebuild burned factory build-
ing; loss \$5000.

W. Va., Logan—Garage.—Midway Garage
Co., capital \$10,000, inceptd., with R. C. Thur-
mond, A. M. McCormick, Geo. Hill.

W. Va., Parkersburg—Automobiles.—Parkers-
burg Automobile Co., capital \$50,000, inceptd.,
with Levin Smith, Jr., H. L. Riggie, Sara R.
Smith.

W. Va., Wheeling—Motors.—Motor Rapid
Transit Co., capital \$100,000, inceptd., with Geo.
D. Burley, E. B. Berisford, Bart Scanlon.

Road and Street Construction.

Ala., Athens—City, S. A. Davis, Clk., will
grade and construct 37,204 lin. ft. concrete
curb and gutter; 22,637 sq. yds. macadam
pavement, treated with bitumen; 46,170 sq.
yds. waterbound macadam; bids until Feb. 4.
(See Machinery Wanted—Paving.)

Ala., Birmingham—City Comsn. will grade
20th St.; \$9700; grade sidewalks on 16th St.,
etc.; \$5500.

Ala., Birmingham—City Comsn. will grade
sidewalks on east and west sides Avenue Y.
Ensley, etc.; Improvement Ordinance 68-D;
\$5000; sidewalks on north and south side of
Bush Blvd., Ensley, etc.; Improvement Ord-
inance 66-D; \$3000.

Ala., Montgomery—City will pave Virginia
Ave. with vibrolithic concrete. Address The
Mayor.

Ala., Montgomery.—Montgomery County
Board of Revenue will repair hard-surface
road from city limits to Aviation Repair
Depot.

Fla., Florida City.—City will improve
streets; construction by Contractor Dillon.

Fla., Gainesville.—State Highway Comsn.,
Tallahassee, Fla., contemplates constructing
State road from 8 mi. west of Gainesville to
Bradford County line beyond Waldo; will
issue \$190,000 bonds.

Fla., Pompano.—Pompano-by-the-Sea Co., A.
F. Barkdull, Secy., 39 N. E. 2d Ave., Miami,
Fla., will construct roads. (See Land De-
velopments.)

Fla., Safety Harbor.—Town Commrs. will
pave and repair roads and streets; vote on
\$20,000 bonds.

Fla., St. Petersburg.—International Realty
Associates, 625 Central Ave., will pave streets;
\$10,000; will let contract.

Ga., Athens.—Clarke County Commrs. Roads
and Revenues, Tate Wright, Clk., will con-
struct concrete pavements on Danielsville-
Athens and Lexington Athens roads; 5.4 mi.;
concrete with stone aggregate; \$100,000; Hage-
dorn Construction Co., Contr., Montgomery,
Ala.; R. T. Goodwyn, Jr., Div. Engr., Athens,
Ga. (Lately noted inviting bids.)

La., Arcadia.—Highway Dept. Board State
Engineers, Room 332 Maison Blanche Annex,
New Orleans, La., will construct 50 mi. gravel
road; \$150,000 available; Smith Bros., Contrs.,
Alexandria, La.; J. B. Wilson, Eng., Arcadia,
La. (Supersedes recent item.)

La., Crowley.—Acadia Parish Police Jury
will gravel roads in Road Dist. Nos. 1 and 2;
issue \$50,000 bonds.

Md., Baltimore.—Dept. Highways has started
grading of McComas St. to Port Covington.

Md., Baltimore.—Board of Awards, care
City Register, will grade, curb and pave
streets listed in Contracts Nos. 179-OC,
180-OC and 181-OC; bids until Jan. 26. (See
Machinery Wanted—Paving.)

Md., Rockville.—Montgomery County Com-
missioners will construct 2½ mi. road from
Montrose to Beane; sold \$20,000 bonds.

Miss., Forest.—Scott County Supvrs., B. R.
Nichols, Clk., will construct roads; issue
\$110,000 bonds.

Miss., Moss Point.—City, R. G. Borden,
Mayor, will pave Addition Area Main St.;
concrete; Mr. Gerkens, Contr. (Lately
noted.)

Mo., Kansas City.—Board Public Works will
pave Main St. from 33d to 39th St.; 8-in.
concrete base and top 4-in. vertical fiber vitrified
brick; will invite bids.

Miss., Canton.—State Highway, Jackson,
Miss., will grade, construct drainage struc-
tures, etc., on 9.8 mi. Canton-Pickens road-
way; Geo. R. Stroud, Contr., Pickens, Miss.;
H. C. Dietzler, State Highway Engr., Jack-
son, Miss. (Lately noted inviting bids.)

Miss., Paulding.—Jasper County Supvrs.
will construct portion of Jackson highway;
voted \$75,000 bonds.

Mo., Kansas City.—Board Public Works
plans the paving of Main St. from Hunter
Ave. to 29th St. and Jackson Ave. from 15th
to 24th Sts.; 3-in. vertical fiber vitrified brick
on 8-in. concrete base.

N. C., Chadbourn.—Town, O. W. Williamson

in charge, will improve streets and water system; \$50,000 available.

N. C., Danbury. — State Highway Comsn., Greensboro, N. C., will construct 11 mi. highway in Stokes County, F. A. No. 121; bids until Jan. 25. (See Machinery Wanted—Road Construction.)

N. C., Hickory.—City plans street improvements including 60,000 sq. yds. streets. Address The Mayor.

N. C., Hickory.—City, Mr. Henry, Town Mgr., plans street improvements of approximately 60,000 sq. yds.

N. C., Kinston.—Lenoir County Highway Comsn., E. V. Webb, will construct hard-surface roadway; \$2,000,000 work involved; \$700,000 available; West Construction Co., Contr., Chattanooga, Tenn.; Gilbert C. White, Engr., Durham, N. C.

N. C., Mocksville.—State Highway Comsn., Greensboro, N. C., will construct 6.98 mi. road in Davie County; F. A. No. 136; bids until Jan. 25. (See Machinery Wanted—Road Construction.)

N. C., Newton.—Town, L. F. Long, Mayor, will improve streets; hard concrete surface; 40,000 sq. yds.; curb and gutter; \$100,000 available; Geo. R. Martin, Contr., Salisbury, N. C.; M. E. Miller, City Engr., Newton, N. C.

N. C., Randleman.—City, A. B. Beasley, Mayor, will construct streets; bids until Jan. 20; A. E. Taplin, Engr., High Point, N. C. (See Machinery Wanted—Paving.)

N. C., Statesville.—Board of Aldermen will pave Broad St., Western Ave., etc.; asphalt; issued \$150,000 bonds.

Okla., Kendall (P. O. Tulsa).—City Comsn. contemplates inviting bids on paving of 7th St. and portion of College Ave.

Okla., Kingfisher.—City will pave streets; construction will begin in spring. Address The Mayor.

S. C., Camden.—Kershaw County Comms., will construct 8.872 mi. Camden-Bishopville Rd. and bridges thereon; bids until Jan. 31; W. L. Kirkland, County Engr. (See Machinery Wanted—Road Construction.)

S. C., Rock Hill.—City will pave streets; 130,000 sq. yds. sheet asphalt on concrete base; 90,000 lin. ft. curb and gutter; \$100,000; Ely Construction Co., Contr., Augusta, Ga.; Gilbert C. White, Engr., Durham, N. C. (Lately noted inviting bids.)

S. C., Walterboro.—South Carolina State Highway Comsn., Columbia, S. C., will construct 15.7 mi. sand-clay road in Colleton County; bids until Jan. 28. (See Machinery Wanted—Road Construction.)

Tenn., Cleveland. — City, L. L. Woollen, Mayor, will pave streets; issue \$50,000 bonds.

Tenn., Jasper.—Marion County Comms., L. P. Brewer, County Judge, will construct 50 mi. permanent type road; \$1,000,000 available, including State, Federal and County. (Lately noted.)

Tex., Ballinger.—Runnels County Comms. will construct roads; contemplate voting on bonds.

Tex., Brenham.—Washington County Commissioners, J. H. Chappell, Judge, will construct 31 mi. State Highway No. 20 from Carmine to Brazos river; \$825,000 available; G. A. Bracher, County Highway, Engr.

Tex., Denton.—City Comsn. will pave W. Oak St. with concrete and brick; O. L. Crigler, Contr., Winnsboro, Tex.

Tex., Galveston.—City will mud-shell roads; build 2 small bridges; \$1500 available; R. C. Bouse, Contr., Port Bolivar, Tex.; C. C. Washington, Engr., Galveston, Tex.

Tex., Houston.—City, A. E. Amerman, Mayor, will pave Travis St. and shell pave Bryan St.; bids opened.

Tex., Lufkin.—Angelina County Comms. will reconstruct dirt road from Lufkin to Zavalla; 25 mi.; Lamar Acker, County Engr., Nacogdoches, Tex.

Tex., Marshall.—Harrison County, W. H. Strength, County Judge, will construct 23 mi. bituminous macadam road on State Highway No. 11; \$15,000 Federal Aid.

Tex., Plainview.—Highway Dept. Plainview Board City Development, Plainview, Hale County Comms., Plainview, contemplates grading highway between Plainview and Silverton.

Tex., San Antonio.—Bexar County Comms., Augustus McCloskey, County Judge, will grade and surface 5.09 mi. Bandera road; general contract awarded to Bexar County, care of County Judge for \$18,152.14; drainage structures of concrete, to J. F. Thompson, San Marcos, Tex., for \$5,498.71; C. E. Hoff, County Engr., San Antonio, Tex. (Lately noted inviting bids.)

Tex., San Marcos.—Hays County Comms., will construct 18.9 mi. Highway No. 29 A; \$101,534.60; J. W. Puckett, County Engr.

Tex., Tyler.—City, H. J. Graesser, City Mgr., will improve streets; iron-ore gravel.

Tex., Tyler.—Smith County Comms., D. R. Pendleton, County Judge, will construct 3 mi. link Jim Hog highway between Lindale and Mineola; contract to Smith County and subcontract to B. R. Copeland, Lindale, Tex.; D. K. Caldwell, County Engr., Tyler, Tex. (Lately noted inviting bids.)

Va., Accomac. — Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 2.58 mi. concrete road on State Road No. 4 in Accomac County, Virginia Project No. 38; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Buckingham.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 2.91 mi. bituminous macadam road on State Road No. 2 in Buckingham County, Virginia Project No. 80; bids until Jan. 21; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Chatham. — Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 4.26 mi. bituminous macadam road on State Road No. 14 in Pittsylvania County, Virginia Project No. 86; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Chesterfield.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 7.86 mi. soil road on State Road No. 29 in Chesterfield County, Virginia Project No. 8-61; bids until Jan. 21; G. P. Coleman, Commissioner, Richmond. (See Machinery Wanted—Road Construction.)

Va., Fairfax.—Virginia State Highway Commission, 116 S. 3d St., Richmond, Va., will construct 1.92 mi. concrete road on State Road No. 1 Virginia Project No. 71; bids until Jan. 21; alternate bids will be received on 2.78 mi. bituminous macadam road on State Road No. 21 in Fairfax County, Virginia Project No. 112; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Lynchburg.—State Highway Comsn. plans extension of \$300,000 on county highway improvement within 20 counties comprising central section Virginia during 1921.

Va., Lynchburg.—City, E. A. Beck, City Mgr., will improve Church St. between 5th and 13th Sts.; bids until Jan. 29. (See Machinery Wanted—Paving.)

Va., Norfolk.—City, Charles E. Ashburner, Mgr., plans street improvements costing \$1,265,263.66 including extension of Olney road from Monticello to Highland Ave. at cost of

\$112,110; resurfacing Main St. from Boush St. to Lake Ave. and other streets.

Va., Portsmouth.—Norfolk County Comsn., Roads and Bridges, Chrmn. West has accepted contract for construction Dismal Swamp Canal highway to North Carolina.

Va., Portsmouth.—Norfolk County Comms. will construct concrete road at Ocean View from Stop 7 to Stop 16, along cottage line; also pave Chesapeake Ave.; will probably invite bids in spring; R. B. Preston, Engr. Lately noted. (See Machinery Wanted—Road Paving.)

Va., Powhatan. — Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 8.01 mi. soil road on State Road No. 13 in Powhatan County, Virginia Project No. 82; bids until Jan. 21; G. P. Coleman, Commr., Richmond, Va. (See Machinery Wanted—Road Construction.)

Va., Rustburg.—Campbell County Supers. will construct 34.07 mi. soil roads; bids until Feb. 1; W. F. Day, County Engr., 703 Church St., Rustburg, and Box 392, Lynchburg, Va. (See Machinery Wanted—Road Construction.)

Va., Spotsylvania.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 5.40 mi. gravel road on State Road No. 7 in Spotsylvania and Orange Counties, Virginia Project No. 92; bids until Jan. 21; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Stafford.—Virginia State Highway Commission, 116 S. 3d St., Richmond, Va., will construct 1.62 mi. concrete and 3.61 mi. gravel road on State Road No. 1 in Stafford County, Virginia Project No. 88; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Staunton. — Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va., will construct 6.42 mi. water-bound macadam road on State Road No. 9 in Augusta County, Virginia Project No. 69; bids until Jan. 21; G. P. Coleman, Commr., Richmond, Va. (See Machinery Wanted—Road Construction.)

Va., Suffolk.—Virginia State Highway Commission, 116 S. 3d St., Richmond, Va., will construct 7.42 mi. concrete road on State Road No. 10 in Nansemond and Norfolk counties, Virginia Project No. 64A; bids until Jan. 21; G. P. Coleman State Highway Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Tazewell.—Virginia State Highway Commission, 116 S. 3d St., Richmond, Va., will construct 1.25 mi. bituminous macadam resurfacing and widening streets through Town of Graham on State Road No. 11 in Tazewell County, Virginia Project No. 8-70; bids until Jan. 21; G. P. Coleman, Commr., Richmond. (See Machinery Wanted—Road Construction.)

Va., Winchester.—City will pave Church St. between 5th and 13th Sts.; brick, concrete and sheet asphalt; bids until Jan. 19. Address The Mayor.

Sewer Construction.

Md., Baltimore.—City Comsn. contemplates constructing sewer system in Brooklyn-Curtis Bay Dist.; estimated cost \$2,129,950; A. C. Christhill, City Engr.

Md., Cumberland.—City let contract to Cumberland Contracting Co. to construct sewers; Ralph L. Rizer, Engr.

Mo., Springfield.—City let contract to Plummer-Adams Construction Co. to construct sewers in Dist. No. 9; lay 25,230 ft. 8-in. vitrified sewer pipe, including 87 manholes; 8 flush tanks and lamp holes; total cost \$41,322.54; W. C. Culler, Engr.; recent contract revoked. (Lately noted contract let to Ralph Langston.)

N. C., Hickory.—City, R. G. Henry, Mgr., voted \$30,000 bonds for sewers.

Okla., Bartlesville.—City, John Johnstone, Clk., will construct sanitary sewers in Dist. Nos. 13, 14 and 15; bids until Jan. 30. (See Machinery Wanted—Sewer Construction.)

Okla., Tulsa.—City will construct sanitary sewer, including laterals, connections and other appurtenances, in Sewer Dist. No. 173; bids until Jan. 17; Mrs. Frank Seaman, City Auditor. (See Machinery Wanted—Sewer.)

Okla., Vinita.—City will construct 2160 lin. ft. 8-in. sanitary sewers on Brown St., from Tahlequah north to Clyde St., costing \$2854.50; Geo. Ashby, City Engr.; bids until Jan. 18. Lately noted invites bids. (See Machinery Wanted—Sewers.)

S. C., Chlo.—Water and Sewerage Comsn. will construct sewer and water system; voted \$100,000; invites bids. (See Machinery Wanted—Sewers.)

Tenn., Memphis.—Memphis Packing Corp. let contract to Brennan & Schevenell to lay 1071 ft. 15-in. sanitary sewers; cost \$8600; Gaines & Carlisle, Engrs.-Archts., 206 Falls Bldg.

Tex., Coleman.—Coleman Sewer Co., capital \$40,000, inceptd. by W. J. Coulson, C. S. Polk, W. D. Allen.

Tex., Oak Cliff, P. O. Dallas.—Oak Cliff Commercial Assn., L. O. Donald, Prest., interested in extension of sewers to the unsewered portions of Tyler St. and Sunset Hill.

Tex., San Antonio.—City Comsn. let contract to Kroeger & Hayner to construct sanitary sewers in 39 streets in Furnish and Fest Sts. Dist.; lay 19,000 ft. additional piping; total cost \$28,000.

Tex., Seminary Hill.—Southwestern Baptist Theological Seminary, Lee W. Scarborough, Prest., plans installing sewage-disposal plant and sewerage system.

W. Va., Martinsburg.—City will construct 12,500 lin. ft. sanitary sewers; bids until Feb. 15; John H. Zirkle, Recorder. (See Machinery Wanted—Sewers.)

W. Va., Spencer.—City, E. W. McKown, Mayor, will improve sewerage system; preliminary survey made to construct disposal tank; total cost \$100,000. (Lately noted contemplated.)

Telephone Systems.

Ark., Little Rock.—Southwestern Bell Telephone Co., 121 W. 7th St. remodel building costing \$55,000.

La., Charles.—Cumberland & Telegraph Co., C. A. Stair, Gen. Mgr., New Orleans, La., expend additional \$37,800 on improvements and enlargement of system.

Md., Baltimore.—Chesapeake & Potomac Telephone Co., W. B. Clarkson, Commercial Supt., 108 E. Lexington St., contemplates installing automatic system in Gilmor and Walbrook exchanges. (Previously noted to equip Kate Ave. exchange with automatic system.)

Mo., St. Louis.—Southwestern Bell Telephone Co., F. O. Hale, Gen. Mgr., purchased site to erect exchange building; ultimate plans call for 19-story plant; will erect 3 or 4-story building on foundation designed for 10-story structure; install automatic equipment.

N. C., Waxhaw.—S. M. Baggett, Pineville, N. C., purchased Waxhaw Telephone Exchange with country connections; will improve and extend.

Okla., Poteau.—Poteau Telephone Co., C. D. Buckley and L. E. Thrasher, Props., let contract to T. P. Milner to erect 25x80-ft. telephone exchange and office building; brick and concrete construction; slate roofing; concrete and hardwood floors. (Lately noted to expend \$200,000 on plant improvements, etc.)

Tex., Booker.—Booker Telephone Co., capital \$11,700, inceptd. by J. W. Bell, G. W. Hanson, I. E. Edwards.

Tex., Dublin.—Southwestern Bell Telephone Co., W. F. Cone in charge, rebuilding toll lines through this section from Ft. Worth to Brownwood.

Va., Lynchburg.—Chesapeake & Potomac Telephone Co., Edward M. Taylor, Mgr., will expend \$100,000 on plant extensions.

Textile Mills.

Va., Danville.—Cotton Products.—Riverside and Dan River Cotton Mills will increase capital from \$12,000,000 to \$19,500,000.

Va., Petersburg.—Hosiery Yarns.—Chesterfield Mfg. Co., J. F. Taylor, Prest., will construct mill.

Water-Works.

Ala., Montgomery.—City Comsn. has let contract to Layne-Bowler Co., Memphis, Tenn., to drill 4 artesian wells with daily supply of 6,000,000 gals.; cost \$110,000.

Fla., Fernandina.—City will construct improvements to municipal water and light plant. Address The Mayor.

Fla., Pompano.—Pompano-by-the-Sea Co., A. T. Barkdull, Secy., 39 N. E. Second Ave., Miami, Fla., will install water and electric plant. (See Land Developments.)

La., Lake Charles.—City will improve water-works, lay water mains on 33 streets; total cost \$445,000. Address The Mayor.

Mo., Fulton.—City will improve and enlarge water and light plant; contemplates \$75,000 bond issue. Address The Mayor.

N. C., Chadbourne.—Town, O. W. Williamson in charge, will improve water and street system; \$50,000 available.

S. C., Chlo.—Water-works & Sewerage Commission will construct water and sewer system; voted \$100,000 bonds; invite bids. (See Machinery Wanted—Water-works.)

S. C., Union.—Water Comms., W. B. Aiken, Supt., will extend water-works; lay 1½ mi. 2-in. pipe line; construct 3,000,000-gal. storage reservoir, concrete settling basin, head house, etc.; bids until Jan. 27; Carolina Engineering Co., Engr., Washington, D. C. (See Machinery Wanted—Water-Works.)

Tenn., Germantown.—Town contemplates installing water and light plant; will issue bonds; Gaines & Carlisle, Engrs.-Archts., 206 Falls Bldg., Memphis, Tenn.

Tenn., Pulaski.—City, W. J. Yancey, Chrmn. Water Comsn., plans construction \$100,000 water-works.

Tex., Dallas.—City Comms. contemplate constructing filtration plant at White Rock.

Tex., Forest Hill.—Forest Hill Water, Light & Fuel Co., capital \$8000, inceptd. by Everett Cain, J. A. Todd, L. R. Jordan.

Tex., Lampasas.—City will improve water-works; contemplates erection of additional standpipe. Address The Mayor.

Tex., San Antonio.—San Antonio Water Supply Co., B. E. Chandler, Prest.-Treas., will construct 20,000,000-gals. capacity reservoir, costing \$250,000; purchased 83-acre site.

Tex., Stephenville.—City will enlarge storage capacity of water-works. Address The Mayor.

Woodworking Plants.

Ala., Mobile.—Spokes, etc.—C. M. Dunn Mfg. Co., capital \$25,000, inceptd. with Martin Van Hauvel, Prest.; C. M. Dunn, Secy.-Treas.

Ala., Mobile.—Veneer.—O. H. Kyle Veneer

Co. will probably rebuild plant burned at loss of \$85,000.

Ala., Tuscaloosa.—Ready-cut Houses.—Premier Mfg. Co. organized with C. G. Harmon, Prest.; J. E. Baker, V.-P.; W. A. Harman, Secy.-Treas.; has plant to mfr. ready-cut houses; mch. purchased. (Lately noted inceptd., capital \$50,000.)

Ga., Macon.—Handles.—Standard Handle Co. will probably rebuild plant burned at loss of \$50,000.

Ky., Louisville.—Wagons.—Kentucky Wagon Mfg. Co., Robert V. Board, Prest., 3d and K St., have purchased additional land for plant improvements; will not make any changes until later in year.

Md., Baltimore.—Sash, Doors, etc.—Radford Wright-Sanders Co., Howard and West Sts., organized with F. W. Radford, Prest.; Wm. Ruetner, V.-P.; both Oshkosh, Wis.; John W. Sanders, Secy.-Treas. and Mgr., Baltimore. (Lately noted inceptd., capital \$100,000.)

Md., Frederick.—Furniture.—Frederick Furniture Co. increased capital from \$19,000 to \$25,000.

N. C., Lexington.—Furniture.—United Furniture Co., capital \$200,000, inceptd. by J. D. Bassett, D. C. Philpott, T. V. Kirkman.

Tenn., Maryville.—Broom Handles, etc.—J. H. Taylor, Route 1, will erect \$800 building of ordinary construction; install 1000 mch.; daily capacity 6 doz. brooms, 7000 handles. Lately noted. (Woodworking Machinery.)

Tex., Dallas.—Wood Products, etc.—General Mfg. Co., 210 Deere Bldg., capital \$15,000, organized with John G. Jester, Prest.; Gus Diamond, V.-P.; P. B. Arrington, Secy.-Treas.

Fire Damage.

Ala., Centreville.—W. L. Pratt's saw and heading mill; loss several thousand dollars.

Ala., Cedar Bluff.—T. L. Lasseter & Co.'s cotton gin; loss \$11,000.

Ala., Cedar Bluff.—T. L. Lasseter & Co.'s cotton gin burned at loss of \$11,000.

Ala., Epes.—R. L. Winslett's store and Honey Cutt's drug store, owned by Mrs. Scarborough of New York.

Ala., Mobile.—O. H. Kyle Veneer Co.'s plant; loss \$85,000.

Ala., Wilmer.—Mrs. Dove Tanner's residence; L. I. Brannan's store.

Ala., Opp.—Prestwood Hotel. Address The Prop.

Ark., Bentonville.—Benton County Hardware Co.'s automobile and implement annex on 12th St.; Atkins Wholesale Grocery Co.'s building.

Ark., Bentonville.—Doke Motor Co.'s building; loss \$150,000.

Ark., Marianna.—Mann & Nixon's 2 buildings; loss \$10,000; Marianna Motor Co.'s garage; loss \$40,000.

Ark., Morrilton.—C. A. Williams' 2 stores; United Poultry & Egg Co.'s warehouse, owned by Rainwater Bros.; loss \$20,000.

Ark., Little Rock.—Lesser Goldman Cotton Co.'s warehouse.

Ark., Little Rock.—Movie Grocery Co.'s warehouse and garage on 16th St.; O. W. McCaskill, Prest.

Ark., Yellville.—H. A. Young's store; J. P. Mooney's residence; Yellville Drug Co.'s store; loss \$20,000.

Fla., Fort Pierce.—T. J. O'Brien, Walter Peterson's and East Fish Exchange Co.'s buildings, owned by F. P. Cobb; loss \$12,000.

Fla., Green Cove Springs.—National Pulp & Turpentine Co.'s plant; loss \$100,000.

Fla., Miami.—Mrs. M. J. McDonald and

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Theo. Cannon's apartment-house, 516 S. W. 2d St.; loss \$5000.

Fla., Midway.—Midway Theater, owned by John R. Cuthbert.

Fla., Pensacola.—Barrineau Mercantile Co.'s building.

Fla., Pensacola.—Robt. L. Slatton's residence at Naval Air Station; J. J. Williams' residence, 1305 W. Gadsden St.; Rev. Mr. Addison's residence, 1807 Gadsden St.

Fla., Westville.—C. W. Rich's sawmill; loss \$2500.

Ga., Alma.—Victor Dean's residence; loss \$10,000.

Ga., Alston.—A. H. & K. M. Johnson's cotton gin; loss \$10,000.

Ga., Atlanta.—Officers' convalescent ward and main operating ward at army hospital. Fort McPherson; Lieut.-Col. H. A. Hansell, Commanding Officer.

Ga., Atlanta.—Mrs. Wm. A. Wright's brick apartment-house, 300 W. Peachtree St.; loss \$75,000.

Ga., Forsyth.—Rev. T. H. Vaughan's residence.

Ga., Macon.—Standard Handle Co.'s plant; loss \$50,000.

Ky., Lexington.—Wolf, Wile & Co.'s, J. D. Pursell Co.'s, Kauffman Clothing Co.'s, C. F. Bower's, E. L. Marsh's stores; Ada Meads Theater, Western Union Telegraph office.

Ky., Lexington.—Wolfe, Wile & Co.'s department store, owned by Clark estate; loss \$120,000; Kaufman Clothing Co.'s store, owned by Harting & Tate, \$40,000; J. D. Pursell Co.'s building, 10,000 to \$15,000.

Ky., Marion.—Marion Opera Hall; Mrs. Electra Frisbie's building; Marion Hardware Co.'s and Moore & Pickens' stores; loss \$100,000.

Ky., Woodburn.—Homer Travelstead's residence.

La., Natchitoches.—Natchitoches Lumber Co.'s plant; loss \$50,000.

Md., Chevy Chase.—All Saints' Episcopal Church; loss, including \$1500 pipe organ, about \$3000. Address The Rector.

Md., Federalburg.—Brown Packing Co.'s warehouse.

Miss., Starkville.—Prof. Breland's residence; loss \$3500.

Mo., Montgomery City.—Hanson Smith's automobile sales and W. H. Blake's garages; loss \$30,000.

N. C., Asheville.—Geo. Greenwood's lumber yards.

N. C., Bailey.—D. W. Bissette & Sons', Christian Furniture Co.'s and Satsky Bros.' stores; Scott's Barber Shop and Postoffice.

N. C., Burgaw.—Mrs. O. P. Johnson's store, occupied by D. J. Farrior & Sons; loss \$10,000.

N. C., Duke.—H. L. Godwin's residence on Lake-Dunn highway, occupied by Jesse Johnson.

N. C., Goldsboro.—Southern Motor Co.'s garage, owned by A. Miller; loss \$15,000.

N. C., Hendersonville.—W. A. Smith's dancing pavilion at Laurel Park; loss \$10,000.

N. C., Henderson.—Hardee Furniture Co.'s and Henderson Produce Co.'s stores.

N. C., La Grange.—J. E. Jones & Sons' tobacco warehouse.

N. C., Monroe.—Residence at Rock Rest, owned by Oscar Collins, Marshville.

N. C., Walnut Cove.—Davis Bros.' warehouse; Slate Bros.' storage house; J. R. Lackey's feedhouse; Will Rowles' livery stable; warehouse of Bailey Walker, Winston-Salem; loss \$75,000.

Okla., El Reno.—Army veterinary hospital and barn at Fort Reno; loss \$30,000.

Okla., Hobart.—First Presbyterian Church; loss \$35,000; C. W. Estes, Pastor.

Okla., Lawton.—Geo. E. Young's cotton gin; loss from \$40,000 to \$45,000.

S. C., Cheraw.—J. B. Bundy's gin; loss \$6000.

S. C., Estill.—W. W. Baker & Co.'s store.

S. C., Greenville.—R. P. Blake's warehouse; loss \$6000.

S. C., Pelion.—Bank of Pelion; A. T. Hut-ton's drug store, J. H. Laird and J. W. Roof's grocery stores; total loss \$15,000.

S. C., Sumter.—Robt. Shelor's residence, occupied by Hal W. Harby; loss \$6000.

S. C., Swansea.—Mrs. Olin Lucas' dwelling, near Swansea.

Tenn., Jacksboro.—Jacksboro High School; loss \$20,000. Address School Board.

Tenn., Lebanon.—J. W. Haralson's residence; loss \$20,000.

Tex., Lockhart.—Will Moble's cottage.

Tenn., Spring Hill.—Alumni Hall at Bran-ham and Hughes School; loss \$75,000; Wm. O. Batts, Supt.

Tenn., Friendship.—Marvel Milling Co.'s flour mill and light plant; loss \$10,000.

Tex., Albany.—Webb & Hill's business build-ings; loss \$10,000.

Tex., Fort Worth.—Worth Hotel; A. and L. August's clothing store; total loss \$80,000.

Tex., Fredericksburg.—Alfred Shandau's residence; loss \$3000.

Tex., Houston.—Lucy Mfg. Corp.'s forge and boiler shops; loss about \$10,000.

Tex., Houston.—Lucy Mfg. Corp.'s power-house, loss \$4000.

Tex., Mercedes.—N. P. Brennan's residence; W. D. Decker's residence; total loss \$20,000.

Tex., Pharr.—Valley Laundry Co.'s plant, loss \$40,000.

Tex., Rogers.—M. V. Baugh's warehouse.

Tex., Waxahachie.—T. J. McDade's build-ing, occupied by Martin-Simmons Shoe Co.

Tex., Wichita Falls.—Linn Boyd Lumber

Co.'s warehouse, lumber shed and office build-ing; loss \$25,000.

Va., Cleveland.—Chestnut Hotel. Address The Proprietor.

Va., Danville.—Carroll Tire Co.'s building, owned by Rorer A. James; loss \$50,000.

Va., Ocean View.—A. B. Seldner, R. Gold-stein, Harry and Phillip Levy, J. B. and J. C. Hoffheimer, W. Nottingham, G. O'Connor and E. C. Cheshire's cottages.

Va., Woodstock.—Brick building occupied by law offices of Judge F. S. Tavenner and Tavenner & Bauserman, Valley Savings Bank and Mutual Telephone Co.

W. Va., Accoville.—Deegans Eagle Coal Co.'s coal tippie and power house; loss \$50,000.

W. Va., Charleston.—Independent Order of Odd Fellows' building, Capitol and State Sts.

W. Va., Charleston.—R. B. Stone's vulcan-izing and tire-repair factory; loss \$5000.

W. Va., Charleston.—West Charleston Feed Co.'s plants; loss about \$3000.

W. Va., Kendalia.—O. D. Hill's sawmill; loss \$6000.

W. Va., Princeton.—Virginian Ry.'s motive power offices; loss \$40,000; H. Fernstrom, Ch. Engr., Norfolk, Va.

W. Va., Ronda.—West Branch Mining Co.'s clubhouse on Cabin Creek.

W. Va., Vivian.—Peerless Coal & Coke Co.'s commissary; loss \$65,000.

W. Va., Wierton.—Peter George's store and dwelling; loss \$12,000.

Damaged by Explosion.

Tex., Wichita Falls.—Chas. F. Noble Gaso-line Co.'s building.

Damaged by Storm.

Va., Roanoke.—Coca-Cola Co.'s plant; loss \$15,000 to \$20,000.

Va., Roanoke.—Roanoke Cement Tiling & Roofing Co.'s plant; loss \$9000.

BUILDING NEWS

BUILDINGS PROPOSED

Apartment-Houses.

D. C., Washington.—Savoy Apartments in-corporated with capital stock of \$200,000; Geo. M. Elliott, Benj. F. Adams, L. M. Larkin, in-corporators.

Fla., Tampa.—Wilford La Rose, Montreal, Canada, purchased site at Bay St. and Bay Shore Blvd. through A. J. Sims, and is re-ported to erect 4-story apartment-house.

Fla., St. Petersburg.—Mr. Pearce of Pearce Drug Co. will erect 3-story building; stores on first floor; apartments above.

Ga., Griffin.—Odd Fellows will erect building in memory of Judge Robt. T. Daniel; cost about \$50,000; T. H. Robertson, Gainesville, and others, committee.

Md., Cumberland.—Salvation Army, G. M. Woods, Comm., 111 Thomas St., will expend \$50,000 to remodel home; 2 stories and base-ment; 48x130 ft.; brick; bids opened Feb. 1; T. W. Biddle, Jr., Archt. Address Mr. Woods.

Md., Frederick.—Geo. O. Paxson purchased 3-story brick dwelling at 27 E. 3d St. and will convert into apartment house.

N. C., Durham.—Mr. Powe will erect apart-ment building; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washing-ton, D. C., and Durham.

Tex., Dallas.—W. J. Oberly will erect 2-story frame apartment-house at 3126 Boss St.; 12 rooms; \$8500.

Tex., Dallas.—J. D. Thomas will erect apart-ment-house at 2820-22 Park Row; 12 rooms; 2 stories; 4 suites; \$5300.

Va., Alexandria.—Hugo Herfurth, Jr., 605 Queen St., will expend \$20,000 to remodel apartment-house, 102 S. Royal St.; 3 stories; 11 suites; brick; tin roof; wood floors; heat-ing plant, \$2100; W. Leon Clark, Archt., 915 Prince St.; construction by owner.

Va., Richmond.—Davis Bros., Inc., will erect apartments; \$160,000; 58x85 ft.; brick; slate and slag roof; oak and pine floors; interior tile; metal doors; marble; steam heat; electric lights; L. Otis Spiers, Archt., 2510 W. Main St.; construction by owners, who may be addressed.

W. Va., Clarksburg.—Okey Bland will ex-pend \$10,000 to repair and erect 3-story addi-tion to apartment-house on W. Pike St.; also grade adjoining lot.

Association and Fraternal.

Md., Brunswick.—Knights of Pythias are considering erection of \$80,000 Pythian Castle to contain public hall with seating accommo-dations for 2000.

Md., Cumberland.—Benevolent Protective Order of Elks will erect \$150,000 home; 43x55 ft.; brick, hollow fireproof tile and steel; 4 ply built-up roof; concrete and hardwood floors; metal ceilings; ventilators; safes;

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

low pressure steam heat; conduit system of lighting; electric elevator; Thos. W. Biddle, Jr., Archt. (Previously noted.)

Mo., Springfield.—Knights of Columbus will erect \$40,000 addition to building 320 E. Walnut St.; J. M. Quinn, Prest.

N. C., Wilmington.—Young Women's Christian Assn., 114 N. 4th St., will remodel interior of Hanson building at Front and Walnut Sts.; cost \$8000. (Previously noted to erect building.)

Va., Clifton Forge.—Young Men's Christian Assn. and Chesapeake & Ohio R. R. Co., T. I. Cabell, Chf. Engr., Richmond, Va., will erect Y. M. C. A. building; 2 stories; brick, steel frame; Jallade, Lindsay & Warren, Archts., 120 Lexington Ave., New York.

W. Va., Fairmont Lodge No. 2, I. O. O. F., will expend \$70,000 to reconstruct Grand Opera House for Odd Fellows' Temple.

Fla., Kissimmee.—Merchants and Farmers Bank purchased Kritz block and will improve for banking offices.

Okla., Bartlesville.—Union National Bank plans to erect \$350,000 building at 3d St. and Johnstone Ave.; 8 stories.

W. Va., Martinsburg.—Masonic Temple Assn., Chas. J. Faulkner, Dr. E. H. Bitner, Gilbert Thurston and others, committee, plans to erect \$150,000 temple.

Bank and Office.

Ala., Birmingham.—Securities Savings & Loan Co. will remodel building; 25x100 ft.; brick and terra-cotta; gravel roof; tile floors; hot water or steam heat; H. D. Breeding, Archt., Watts Bldg.; separate contracts. (Lately noted to expend \$25,000 for improvements.)

Fla., Orlando.—Dr. R. B. Kime, Lakeland, and Dr. J. A. Ford, Orlando, purchased site at Robinson and Orange Aves. and plan to erect 3-story professional building; 75x100 ft.

Md., Baltimore.—Baltimore Branch of Federal Reserve Bank of Richmond, Morton M. Prentiss, Mgr., is considering plans for improving and enlarging building; details not determined.

N. C., Durham.—First National Bank will remodel interior of building; Milburn, Heister & Co., Archts., Durham, and Union Savings Bank Bldg., Washington, D. C.

S. C., Greer.—Planters Savings Bank, Howard B. Carlisle, Prest., Spartanburg, will erect 2d-story addition, enlarge building on side, remodel interior, etc.; Capt. John G. Greer, Sr., S. G. James, W. T. Gibson and W. M. Ballinger, Bldg. Com.

Churches.

Ala., Florence.—First M. E. Church South, M. M. Stripplin, Chrmn. Bldg. Comm., will erect building; plans not made.

Ark., Levy.—Methodist Church, Rev. Ed ward Forrest, Pastor, will erect building.

D. C., Washington.—Emory M. E. Church, Rev. F. J. Prettyman, Pastor, 1600 Georgia Ave. N. W., will erect \$65,000 building; 1 story, gallery and basement; stone; bids about Feb. 15; Milburn, Heister & Co., Archts., Union Savings Bank Bldg. (Previously noted.)

Fla., Palatka.—St. James Methodist Church, Rev. J. L. Sibert, Pastor, will erect building at Reid and 4th Sts.

Mo., Stockton.—Presbyterian Church will erect \$20,000 building; Hawkins & Hoener, Archts., Springfield; Rev. E. L. Combs, Asst. Synodical Supt., Springfield, interested.

La., New Orleans.—Seventh Day Adventists will erect \$20,000 building; about 55x100 ft.; details not determined. Address A. J. Melkiesohn, 810 Jackson Ave.

Okla., Hobart.—First Presbyterian Church,

C. W. Estes, Pastor, will erect building to replace structure noted burned at loss of \$35,000.

Tex., Beaumont.—First Baptist Church will erect \$75,000 Sunday-school building adjoining present structure; brick and stone; auditorium to seat 1500; slate roof; wood floors; plaster board; rolling partitions; steam heat; electric lights; bids about Feb. 1. Address John E. Keith.

Tex., Dallas.—First Baptist Church is reported to erect \$800,000 building; R. H. Hunt Co., Archt., Dallas; Ferrand & Fitch, Asso. Archts., St. Louis.

Tex., Dallas.—First M. E. Church South will erect \$250,000 building; Gothic architecture; auditorium to seat 2100, which may be increased to 2500; Sunday-school auditorium to seat 1200; choir loft to accommodate 10; Herbert M. Greene Co., Archt. (Lately noted.)

Tex., Mount Pleasant.—Methodist Episcopal Church South, Rev. W. F. Davis, Pastor, Box 366, plans to erect building for church and community center; \$20,000 to \$25,000; about 60x100 ft.; asbestos shingle or tile roof; wood floors, concrete in basement; hot-air heat; electric lights; probably hollow fireproof tile and metal ceilings; plaster board; steel laths; rolling partitions. Address Dr. F. M. Fleming or Rev. Mr. Davis.

Tex., Orange.—First Methodist Church will erect building; 2 stories; steam heat; install pipe organ. Address The Pastor.

Tex., San Antonio.—McKinley Avenue Methodist Church will expend \$17,500 for improvements to building at S. Presa St. and McKinley Ave.; install pipe organ, etc. Address Rev. Z. V. Liles, Pastor.

Va., Dumbarton.—Bethlehem Baptist Church, Rev. Mr. Crabtree, Pastor, will erect \$25,000 church and Sunday school; 2 stories; 54x90 ft.; brick; Herbert L. Cain, Archt., 12 N. 9th St., Richmond.

Va., Highland Springs.—New Bridge Baptist Church, Rev. E. J. Wright, Pastor, Old Dominion Trust Bldg., Richmond, will erect \$6000 addition to building; 2 stories; 50x60 ft.; frame; Herbert L. Cain, Archt., 12 N. 9th St., Richmond.

Va., Norton.—First Baptist Church, Rev. D. M. Simmons, Pastor, will erect \$60,000 church and Sunday school; 2 stories and basement; 55x100 ft.; brick; limestone trim; Herbert L. Cain, Archt., 12 N. 9th St., Richmond.

Va., Petersburg.—Grace Episcopal Church, Rev. C. Braxton Bryan, Rector, 415 High St., will erect \$100,000 building, Sycamore St., near Mars; brick; Calrow, Wrenn & Tazewell, Archts., New Monroe Bldg., Norfolk.

City and County.

Mo., Kansas City.—Community Building.—City, Howard Payne, Clk., plans to erect community building and bathing pool; \$50,000.

Okla., Miami.—Library.—City will erect \$13,000 library; brick; stone trim; composition roof; contract let Jan. 20; J. L. Heckenlively, Archt., Landers Bldg., St. Louis. (Lately noted.)

Okla., Slick.—Jail.—Creek County Commrs., Sapulpa, will erect jail; stone and concrete.

Tenn., Alton Park.—Town Hall.—Board of Commrs. will erect combined town and fire hall; 2 or 3 stories; 50x100 ft.; brick.

Courthouses.

Ky., Cadiz.—Trigg County will erect courthouse to replace burned structure; R. H. Hunt & Co., Archts., Chattanooga.

Okla., Cherokee.—Alfalfa County, H. G. Frizzell, Clk., will receive bids until Feb. 1 to erect \$125,000 courthouse; 3 stories and basement; brick, stone and reinforced concrete; gravel roof; concrete floors; metal

doors; vaults; wire glass; vault lights; ventilators; steel sash and trim; steam heat; electric lights; plans and specifications at office Tonini & Bramblett, Archts., 301-2 Terminal Bldg., Oklahoma City, and office County Clk. (Lately noted.)

S. C., Summerville.—Courthouse and Jail Comm., M. S. Connor, Secy., St. George, will receive bids until Feb. 2 to erect addition to courthouse; plans and specifications at office Chas. C. Wilson, Archt., 804 Palmetto Bldg., Columbia.

Dwellings.

Ala., Gadsden.—Church of Holy Comforter, Rev. E. C. Seaman, Rector, will erect \$5000 rectory at Chestnut and 5th Sts.; tapestry brick.

Ark., Little Rock.—August Kohler will erect 2-story residence at 400 Fairfax Ave.; \$13,000.

D. C., Washington.—Harry Wardman, 1430 K St. N. W., will erect 2 residences, 2410-12 Massachusetts Ave.; \$10,000 each.

D. C., Washington.—Geo. N. Ray, 1147 Connecticut Ave. N. W., is preparing plans for alterations and additions to residence, north-west section; \$50,000; 1 story; brick and stone.

D. C., Washington.—Wm. Keyser, care W. S. Plager, Archt., 1930 Kearney St., N. W., will erect \$11,000 residence, 29th and Kearney Sts.; 2 stories, cellar and attic; 24x36 ft.; hollow tile and stucco.

D. C., Washington.—E. G. Moore will erect \$7500 residence; 30x28 ft.; brick and frame; concrete, oak and pine floors; interior tile; shingle roof; hot-water heat; electric lights; Speiden & Speiden, Archts., 1123 New York Ave.; bids opened Jan. 20.

D. C., Washington.—B. H. Gruver, 616 Union Trust Bldg., will erect 26 dwellings; \$250,000; 2x40 ft.; brick; tin, slate and tile roof; 5x8 oak and edge-grain pine floors; interior tile; ventilators; wire glass; hot-water heat; electric lights; letting separate contracts. Address owner. (See Machinery Wanted—Electrical Equipment; Cement; Heating Plant; Paint.)

Fla., St. Petersburg.—Calvin Snyder will erect \$5000 residence on Broadway.

Fla., St. Petersburg.—S. W. Schooley will erect 3 dwellings on Eighth Ave.; \$30,000.

Fla., St. Petersburg.—John Silas will erect residence at 25th and 34 Ave., north.

Fla., St. Petersburg.—W. F. Stewart, Chattanooga, Tenn., purchased property on Central Ave. near 9th St. and is reported to erect number of dwellings; also erect warehouse for storing materials.

Fla., Tampa.—E. M. Fisher will erect frame dwelling, 209 Newport Ave.; cost \$6000.

Fla., Tampa.—Tony Vermore will expend \$5000 to improve dwellings at 109-15 Laurel Ave. (Lately incorrectly noted at Tenn., Memphis.)

Fla., Tampa.—Harry P. Kennedy will erect dwelling, 2110 Watrous Ave.

Ky., Bowling Green.—A. W. Beatty will erect 2-story brick residence; cost \$10,441.

Ky., Versailles.—Mrs. Haupt, care Loomis & Hartmann, Archts., Todd Bldg., Louisville, will expend \$25,000 to remodel and erect addition to residence; 2 stories; brick and stucco.

Ky., Whitesburg.—Trace Fork Mining Co. increased capital from \$100,000 to \$400,000, and will erect number of miners' houses, coal tipples, etc.

La., New Orleans.—A. J. Cusimano will erect \$8000 residence on N. Broad St.; 1 story.

La., New Orleans.—C. Maestri will erect bungalow in Boulevard Heights.

La., Shreveport.—J. L. White will erect \$5000 dwelling on Eagan St.

La., Shreveport.—R. A. Nelson will erect \$10,000 dwelling on Eagan St.

La., Shreveport.—J. R. White will erect \$5500 residence on Jordan St.

Md., Baltimore.—Ellsworth Miller, 4510 Belmont Ave., will erect 2½-story frame cottage on Harford Rd.

Md., Baltimore.—Jno. W. Styne, Liberty Heights and Clarendon Aves., will erect 2 frame cottages on Norwood Ave., west of Woodbine Ave.; \$7000 each.

Md., Baltimore.—Clarence C. Brickley, 5408 Midwood Ave., will erect 2-story-and-basement, hollow-tile dwelling, Center St., south of Beaumont Ave.; 42x30 ft.; furnace heat; cost \$8000; plans and construction by owner. (Lately noted.)

Md., Cabin John.—Baltimore capitalists have purchased 350-acre site at Cabin John Park, on Potomac River, and will develop; erect 100 or more residences; Milburn, Heister & Co., Archts., Union Savings Bank Bldg., Washington, D. C.; Jos. Stankey, Engr., Rock-vill, Md.

Md., Frederick.—Gilmore R. Flaunt purchased number of building sites in College Park and plans to erect dwellings.

Mo., Kansas City.—W. S. Smith, Wright Bldg., will erect residence; 2 stories and basement; 40x75 ft.; brick and hollow tile; composition-shingle roof; B. F. Young, Archt.

Mo., Old Monroe.—Rev. Father Reef will erect parochial residence; 2 stories and basement; 36x42 ft.; brick; \$15,000; H. P. Hess, Archt., 811 Cote Brillante, St. Louis.

Mo., Pawhuska.—H. C. Brenner will erect residence; 2½ stories and basement; 36x42 ft.; brick and hollow tile; shingle roof; W. V. Street, Archt., Caldwell Murdock Bldg., Wichita, Kan.

Mo., Webster Groves.—E. G. Shikes will erect residence; 2½ stories; 30x60 ft.; stucco and tile; \$25,000; Study & Farrar, Archts., Arcade Bldg., St. Louis.

Mo., Webster Park.—Dr. Albert Owen, Frisco Bldg., St. Louis, will erect \$15,000 residence and garage; 2 stories and basement; brick; A. W. Black & Son, Archts., 314 N. 4th St., St. Louis.

N. C., Asheville.—Mrs. C. A. Stark will erect 6-room residence on Blue Ridge Ave., West Asheville; \$5000.

N. C., Durham.—H. R. Goodall will remodel residence; Milburn, Heister & Co., Archts., Durham, and Union Savings Bank Bldg., Washington, D. C.

N. C., Gastonia.—E. H. Clement will not erect residence as lately reported.

Okla., Oklahoma City.—M. Kerfoot will erect \$7000 residence, 121 W. 14th St.

S. C., Greenville.—Neal & Pack will erect 2-story brick-veneer dwelling on Houston St.; \$7500.

Tenn., Paris.—J. W. Lewis will erect brick dwelling; 7 rooms; metal roof; oak floors; steam heat; Walter Lucky, probable contractor.

Tex., Brenham.—Dr. O. F. Schoenvogel will erect bungalow on W. Alamo Ave.; \$7000; J. R. Nix, Archt.

Tex., Dallas.—E. G. Calahan will erect frame cottage at 2306 Park Row; \$6000.

Tex., Houston.—R. B. Nichols will erect 2 three-room houses on Wayne St.; cost \$6000.

Tex., San Antonio.—S. A. Freeborn will erect 5-room brick dwelling on Main Ave.; cost \$5000.

Tex., San Antonio.—R. A. Richey, 505 Navarro St., is erecting 20 5-room dwellings; \$2350 each; also 30 3-room dwellings; \$1100 each; frame; shingle roof; wood floors; wiring and fixtures about \$50 each.

Va., Alexandria.—Mrs. J. Marscher, Little River Turnpike, will expend \$7000 to remodel residence, 125 N. Washington St.; 3 stories; brick; W. Leon Clark, Archt., 917 Prince St.

Va., Newport News.—W. E. Barrett and M. B. Vest, 25th and Huntington Sts., will erect 3 dwellings; frame; \$12,000.

Va., Norfolk.—J. W. Shuster will erect 2-story frame dwelling in Larchmont; 6 rooms; cost about \$5000.

Va., Richmond.—L. H. Goodman will erect frame and stucco dwelling on Block C, Ginter Park Terrace; \$6000.

W. Va., Morgantown.—Hope Realty Co., Albert Shuman, Prest.; Noah A. Moore, V.-P.; O. O. Donley, Secy.-Treas.; Wm. P. McCul, Gen. Mgr.; \$100,000 capital; erect number of dwellings.

W. Va., St. Albans.—Union Co-operative Building & Realty Co. Incptd. with capital stock \$50,000; J. O. Murray, Wm. D. Davis, H. L. Burton, J. C. Woodward, Owen McCormick and J. C. Trowbridge, incptrs.

Government and State.

Ga., Columbus.—Camp. — War Department, Washington, D. C., will expend \$5000 to erect temporary quarters for hostesses of Service Club No. 1; Col. Jones, Camp Quartermaster.

W. Va., Charleston.—Mezzanine.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., will construct mezzanine floor, etc. in postoffice; Geo. E. Wright, Chicago, lowest bidder. (Lately noted.)

Hotels.

Fla., New Port Richey.—Enchantment Inn Co., chartered; \$30,000 capital; J. S. Jackson, Prest.; D. J. Clark, V.-P.; Clyde F. Burns, Secy.-Treas.

Fla., Vero.—Southern Hotel & Mercantile Co., chartered; \$200,000 capital; Paul Berndt, Prest.; J. W. Knight, V.-P.; F. Chas. Gifford, Secy.-Treas.

Tex., San Antonio.—Herbert S. Green is preparing plans for 14-story hotel on Houston St.; Mr. Green wires Manufacturers Record: "Cost \$600,000; working plans await approval of sketches; opening bids indefinite; owner's name withheld."

Hospitals, Sanitariums, Etc.

Okla., Bartlesville.—City and Washington County, Jess Overleare and others, committee, will erect \$200,000 hospital; Walton Everman, Archt., 1200 Osage Ave. (Previously noted.)

Tex., Childress.—Childress County, M. J. Hathaway, Judge, will not erect hospital, as lately reported.

Va., Charlottesville.—Virginia State Health Commission, care of Dr. Ennion G. Williams, 110 Capitol St., Richmond, will erect convalescent cottage, administration building and infirmary at Blue Ridge Sanatorium.

Miscellaneous.

Ala., Tuscaloosa.—Clubhouse.—R. E. Dunham is Chrmn. of Comm. promoting erection of country clubhouse.

Ga., Columbus.—Clubhouse.—Harmony Club, Albert S. Loewenherz, Prest., will remodel old William Beach home for clubhouse; cost \$25,000.

Ga., Macon.—Clubhouse.—Woman's Club, Mrs. Orvilla A. Park, Chrmn. Comm., will erect clubhouse.

Md., Ilchester.—Home.—All Saint Sisters, St. Gabriels Home, will erect stone convent and chapel at Orange Grove; 224 ft. long and 124 ft. depth in center; Mottu & White, Archts., 322 N. Charles St., Baltimore.

Okla., Chickasha.—Grandstand, etc.—Chickasha Baseball Assn. purchased 10 acres of ground for baseball park and athletic field, and will erect grandstand, etc.

Okla., Oklahoma City.—Fair.—State Fair Assn., I. S. Mahan, Mgr., will erect additional restrooms, swine exhibit building, poultry show building, regravels roads, etc.; \$100,000.

Va., Pulaski.—Baseball Park.—Hubert F. Groselose is chairman of committee to purchase site and construct grandstand, fence, etc., for ball park.

Va., Virginia Beach.—Bathhouse.—Neff & Thompson, Seaboard Bank Bldg., Norfolk, prepared plans for \$30,000 addition to Virginia Beach Casino for bathhouse; fireproof; brick and concrete.

Railway Stations, Sheds, Etc.

Tenn., Johnson City.—Carolina, Clinchfield & Ohio R. R., W. C. Hattan, Ch. Engr., Erwin, Tenn., will erect shelter shed at passenger depot; frame; cost \$6000; work by company forces. (Lately noted.)

Tex., Dallas.—Missouri, Kansas & Texas R. R., Frank Ringer, Ch. Engr., will erect \$300,000 freight station at N. Jefferson St. and Ross Ave.; brick and tile.

Tex., McAllen.—St. Louis, Brownsville & Mexico R. R., C. S. Kirkpatrick, Ch. Engr., Houston, will not erect freight depot as lately reported.

Va., North Garden.—Southern R. R., J. S. Lemond, Ch. Engr. M. W. & S. Lines East, Charlotte, N. C., is reported considering improvements to cost \$100,000, including depot, underpass, etc. (Lately incorrectly noted at Va., Charlottesville.)

Va., Richmond.—Richmond, Fredericksburg & Potomac R. R., E. M. Hastings, Asst. Engr., Broad Street Station, will erect freight station on Broad St. between Harrison and Norton Sts.; brick, concrete and steel; \$75,000.

Schools.

Ala., Mobile.—Mobile County, S. S. Murphy, Supt., plans to erect 14-room school at Claborne and Canal Sts.

Fla., Daytona.—Board of Public Instruction plans to erect addition to Central High School.

Ga., Fowlston.—Fowlston Consolidated School Dist., H. W. Bussey, Secy., plans to sell \$15,000 bonds to erect and equip school building. (Previously noted.)

Md., Baltimore.—Johns Hopkins Medical School will erect pathological building at Monument and Wolfe Sts.; "L"-shape; 165x90 ft.; each wing about 40 ft. wide; 7 stories; also two 1-story buildings on Wolfe St., adjoining main structure to be used for autopsy-room and museum; cost about \$600,000; Jos. Evans Sperry, Archt., Calvert Bldg.

N. C., Canton.—Haywood County voted \$150,000 bonds and will erect \$85,000 high school; 100x100 ft.; brick; fireproof roof; hardwood floors; metal ceilings and doors; plaster board; steam or hot-water heat; electric lights. Address Chrmn. School Board. (Lately noted.)

N. C., Hickory.—Town of Highland will erect \$45,000 school; 63x130 ft.; brick; asbestos roof; double floors, concrete in basement; cast-iron foundation; wood sash; ventilators; electric lights; steam heat, \$6000; 2 stairways and fire-escape; bids opened Mch. 1; L. R. Rink, Archt. Address Chas. E. Heffner. (Previously noted.)

N. C., Raleigh.—Raleigh Township School Comm., T. B. Eldridge, Chrmn., will petition Legislature for authority to vote on \$2,000,000 bonds to purchase sites, erect, rebuild and improve public school buildings. (Lately noted.)

Tenn., Jacksboro.—County Board of Public Instruction, Prof. Edgar H. Smith, Supt., will rebuild school noted burned at loss of \$30,000.

Tenn., Nashville.—Vanderbilt University will erect \$400,000 building for social, recreational and religious center; 140x180 ft.; reinforced concrete, native stone; collegiate Gothic architecture; probably slate roof; concrete and hardwood floors; heating and lighting from central plant; hollow fireproof tile; interior tile; metal doors; wire glass; vault lights; ventilators; steel sash and trim. Address A. M. Souby, Alumni Secy., Vanderbilt University. (Lately noted.)

Tex., Fort Worth.—Polytechnic School Board, S. S. Dillow, Prest., plans to erect 2 school buildings to accommodate high and grammar grades; cost \$300,000.

W. Va., Lewisburg.—Board of Education, F. M. Arbuckle, Secy., will erect high school; 2 stories and basement; 135x132 ft.; brick and stone; reinforced concrete flat slab floor and roof construction; A. Rus Warne, Archt., Masonic Temple Bldg., Charleston.

Stores.

Ala., Jasper.—J. M. Hayes & Co. will erect store building to replace lately-noted burned structure; brick; sand and gravel floor.

Ala., Jasper.—Cranford Mercantile Co. will erect store building to replace lately-noted burned structure; brick; sand and gravel roof.

Ark., Bentonville.—Benton County Hardware Co. will rebuild automobile and implement annex noted burned.

D. C., Washington.—Thos. R. Aisquith will erect combined stores and dwellings at 3700-06 Macomb St.; \$45,000.

Fla., Fort Lauderdale.—Crim & Son will erect business block; 1 story; foundation for 4 stories; concrete.

Fla., Fort Pierce.—F. P. Cobb will erect 3 structures noted burned at loss of \$12,900.

Md., Baltimore.—Samuel Perego, 703 White-lock St., will erect three 1-story brick buildings in 900 block White-lock St.; \$6500.

N. C., Wilmington.—Edrd Bros., Charlotte, will expend \$25,000 to remodel 5-story building at Front and Grace Sts. for department store.

Okla., Chickasha.—J. H. Kelsey plans to erect 2-story building on Chickasha Ave.

Tex., Dallas.—D. L. Whittle Music Co. will remodel interior of building at 1312 Elm St.; \$6000.

Tex., Dallas.—W. W. S. Surgeons will erect addition to building at 2632 Live Oak St.; \$6500.

Va., Richmond.—Plant-Lipford, Inc., will erect 30 brick buildings for Piggly-Wiggly Stores; \$12,000 to \$15,000.

Va., Richmond.—Davis Bros., Inc., and H. D. Lipford will erect 2 buildings for Piggly-Wiggly Grocery Stores; \$12,000 and \$800; 20x100 ft.; brick; hardwood floor; hot-water heat; electric lights; plans and construction by Davis Bros., Inc.

Theaters.

Ark., Newport.—H. C. Sanders will erect picture theater; 1 story and balcony; seating capacity 800; brick and concrete; Carey roof; wood floors over concrete; metal ceilings; plaster board; ventilators; electric lights; bids opened about Feb. 1. Address Mann & Gatling, Archts., 614-18 Seimtar Bldg., Memphis, Tenn.

Fla., St. Petersburg.—Arthur L. Norris will erect theater at 9th St. and 4th Ave.; seating capacity 260.

D. C., Washington.—J. S. Leatherman will erect moving-picture theater on 7th St., between P and Q Sts. N. W.; 4 stories in front; seat 700; bids received about Feb. 1; Mil-

burn, Heister & Co., Archts., Union Savings Bank Bldg.

Md., Baltimore.—Eureka Amusement Co., Wm. Kalb, Prest., 1131 Columbia Ave., plans to erect motion-picture and vaudeville theater at 709-15 Columbia Ave.; 60x120 ft.

N. C., Lenoir.—Geo. O. Shakespear and associates will erect 2-story building; seating capacity 600.

S. C., Rock Hill.—Max W. Bryant will erect \$35,000 theater; 44x117 ft.; 2 stories and basement; brick; interior tile; cement, tile and wood floors; tin roof; ornamental terracotta; metal ceilings; ventilators; brass railing; electric lights; plate glass; plastic relief mould; ornamental steel grills; steel beams and columns; steam heat; contract let Jan. 18. Address Julian S. Starr, Archt. (Previously noted.)

Warehouses.

Ark., Little Rock.—Movie Grocery Co., O. W. McCaskill, Prest., will erect building to replace burned structure.

Fla., St. Petersburg.—W. F. Stewart, Chattanooga, Tenn., will erect warehouse. (See Dwellings.)

BUILDING CONTRACTS AWARDED

Apartment-Houses.

Mo., St. Louis.—L. H. Eilers, 2601 Allen Ave., will erect \$15,000 flat and store building, 2610-16 Allen St.; 1 and 2 stories; 51x26 ft. and 17x35 ft.; T. Cocograndi, Contr., 5216 Botanical St.

Association and Fraternal.

N. C., Asheville.—Young Men's Christian Assn., 27 Haywood St., will expend \$13,000 or \$14,000 to remodel Burroughs property for home; maple floors; interior tile; Jallade, Lindsay & Warren, Archts., 124 Lexington Ave., New York; L. L. Merchant, Contr.; Hampton Electric Co., electrical work; Sluder Bros., plumbing and heating.

Bank and Office.

Ala., Atmore.—Bank of Atmore will erect \$35,000 building; 50x90 ft.; lower floor for bank; upper floor for 15 or 18 offices; Spanish front; tile and hardwood floors; steam heat; Wainwright Construction Co., Contr.

Tenn., Johnson City.—Unaka and City Natl. Bank is erecting \$165,000 building; 45x101 ft.; 6 stories; concrete and steel; concrete roof and flooring; steam heat; R. H. Hunt, Archt., Chattanooga; M. L. Beeler & Co., Contrs., Johnson City. (Previously noted.)

Va., Richmond.—Federal Reserve Bank will erect building at 8th and Franklin Sts. as annex to structure at 9th and Franklin Sts.; 6 stories; \$600,000; Carneal & Johnston, Archts., Chamber of Commerce Bldg.; John T. Wilson Co., Contr., Mutual Bldg.

Churches.

Miss., Clinton.—Baptist Church, Dr. Zeno Wall, Pastor, will erect \$75,000 building; I. C. Garber, Contr., Jackson.

Miss., Clinton.—Baptist Church, Dr. Zeno Wall, Pastor, will erect \$75,000 building; brick; R. H. Hunt, Archt., Chattanooga, Tenn.; I. C. Garber, Contr., Millsaps Bldg., Jackson, Miss.

Miss., Natchez.—First Baptist Church, Rev. Wm. A. Borum, Pastor and Chrmn. of Bldg. Comm., will erect \$50,000 building later noted; 80x130 ft.; Spanish-tile roof; concrete and pine floors; metal ceilings; rolling partitions or accordion doors; ventilators; steam heat; electric lights; J. E. Greene, Archt., Birmingham, Ala.; Bost & Moss, Contrs., Natchez. (See Machinery Wanted—Brick; Curtains.)

La., Monroe.—North Louisiana Farmers' Assn. will erect warehouse.

Mo., St. Louis.—Central Warehouse & Realty Co., C. H. Dunker, Prest., 320 N. 12th St., will erect \$90,000 warehouse, 4th and Poplar Sts.; 3 stories and basement; 80x130 ft.; brick and concrete; fireproof; Cann & Corrubia, Archts., De Menil Bldg.

N. C., Huntersville.—Farmers' Bonded Warehouse Co. chartered with \$50,000 capital; John W. Cross, J. L. Choate and J. W. Auten, Jr., Incprtrs.

S. C., Chesnee.—Chesnee Bonded Warehouse Co. chartered with \$30,000 capital; V. A. Hatchette, Prest.; P. L. Martin, V.-P.; J. F. Ezell, Secy.-Treas.

Tex., Temple.—Planters' Bonded Warehouse Co. of Dallas, F. C. McGinley, representative, will erect \$50,000 warehouse; 20,000 bale capacity; steel and concrete. (Lately noted.)

Va., Alexandria.—Old Dominion Glass Co., Lorenzo Wolford, Prest., plans to rebuild warehouse at Montgomery and 1st Sts., previously noted burned; 1 story; 79x115 ft.; frame; cost \$20,000. (Lately incorrectly noted at Richmond, Va.)

City and County.

Mo., Kansas City.—Comfort Station.—Board of Public Works will erect \$20,000 comfort station, 4th and Grand Aves.; 1 story; F. C. Gunn, Archt., 1108 Republic Bldg.; P. J. Morley & Son, Contrs., 456 Sheldley Bldg.; Chas. Hunter Heating & Plumbing Co., 1522 Locust St., heating and plumbing. (Previously noted.)

Dwellings.

Fla., Jacksonville.—C. E. Bell will erect 6 dwellings, \$8350; A. R. Dennis, Contr.

Fla., St. Petersburg.—International Realty Assn., Jos. A. Townsend, Resident Mgr., 625 Central Ave., will develop St. Petersburg Beach for residential suburb; erect 5 dwellings; Hanford Constr. Co., Contr., Duluth, Minn.; paving in connection to cost \$40,000.

Ky., Lennut.—Number Four Superior Coal Co. will construct 50 or more miners' houses, coal tipples, etc.; contract let.

Mo., Webb City.—T. H. Garratt, 324 W. Hall St., Contr. to erect \$5000 residence; 28x28 ft.

Tex., Weatherford.—Producers' Pipe Line Co. will erect 7 cottages at site of plant, about 6 mi. from Weatherford; contract let.

Va., Cape Charles.—Mrs. Ada Hembrick will erect \$15,000 residence; 1½ stories; 25x47 ft.; brick; H. Robt. Diehl, Archt., New Monroe Bldg., Norfolk; C. H. Legg, Contr., Cape Charles. (Lately noted.)

W. Va., Charleston.—C. A. Sullivan, Hubbard Grocery Co., is erecting \$10,000 residence later noted; 26x34 ft.; brick and tile; tile roof; oak floors; hot-air heat; electric lights; J. A. Glenn, Archt. and Contr. (See Machinery Wanted—Window Screens.)

W. Va., Rivesville.—Fairmont & Cleveland Coal Co., E. A. Russell, Pur. Agt., Fairmont, will erect 25 miners' houses in South Rivesville; 3, 4, 8 and 10 rooms; frame; composition roof; material purchased and contract let. (Lately noted.)

Government and State.

N. C., Charlotte.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Act. Supervising Archt., Washington, D. C., will install electric elevator in postoffice; Otis Elevator Co., Contr., 11th Ave. and 26th St., New York; also construct mailing vestibule, add 100 lock-boxes, etc.; Geo. C. Wright, Chicago, low bidder. (Lately noted.)

Hospitals, Sanitariums, Etc.

Tenn., Knoxville.—Eastern Hospital for Insane, Dr. Smith, Supt., will erect tuberculosis sanatorium at Lyon's Creek; cost \$35,000; 1 story; 84x152 ft.; contain 2 wards, 16 private rooms and 4 attendant rooms; accommodate 75 patients; contract let. (Lately noted.)

Tex., El Paso.—Baptist Home Mission Board, Atlanta, will erect Southern Baptist Sanatorium; H. F. Vermillion, Supt., Box 1241; cost \$375,000; men's infirmary, 116x216 ft.; power and refrigeration plant, 50x96 ft.; women's infirmary, 116x216 ft.; superintendent's building, 42x88 ft.; install septic tanks, pipe lines, etc.; all structures of rubble stone walls; Spanish tile roof; terrazzo and Marmox cement floors; 2 high-pressure steam boilers for vacuum heat, \$37,322; electric wiring and equipment, \$18,000; hollow fireproof tile; interior tile; plaster board; ventilators; steel sash and trim; Richard E. Schmidt, Garden & Martin, Architects, 104 S. Michigan Ave., Chicago; Lehmann & Wuehrman, representatives, El Paso; H. L. Stevens, El Paso, Contr., to install refrigeration. Address W. C. Hedrick Construction Co., Gen. Contr., Dallas, Houston and Fort Worth. (Previously noted.)

Railway Stations, Sheds, Etc.

Va., Richmond.—Richmond, Fredericksburg & Potomac R. R. E. M. Hastings, Asst. Engr., Broad Street Station, will erect freight warehouse on Broad St. between Harrison and Norton Sts.; 71x253 ft.; brick, concrete and steel; composition roof; mastic floors; metal doors; \$90,000; John T. Wilson Co., Contr., Mutual Bldg.

Schools.

D. C., Washington.—Church of Holy Comforter, Rev. C. E. Wheeler, Pastor, will erect \$250,000 school at E. Capitol and 15th Sts.; 120x146 ft.; 3 stories and basement; fireproof; slate and slag roof; composition floors; steam heat; electric lights; electric elevator; Milburn, Heister & Co., Architects, Union Savings Bank Bldg.; C. J. Cassidy Co., Contr., Southern Bldg. (Lately noted.)

Fla., Fort Myers.—Lee County Board of Public Instruction, O. M. Davidson, Chmn.,

will erect high school in Special Tax Dist. No. 1; 2 stories and basement; brick; \$74,680; F. J. Kennard, Archt., Tampa; W. C. Robertson, Contr., Fort Meade. (Previously noted.)

S. C., Charleston.—Charleston County Board of Education will erect \$35,000 school; hollow tile; tin roof; wood floors; steam heat, about \$2000; all materials purchased. Address Charleston Engineering & Contracting Co., Archt. and Contr. (Previously noted.)

Tex., El Paso.—University of Texas, R. E. Vinson, Prest., will erect dormitory at School of Mines; 40x90 ft.; reinforced concrete and hollow fireproof tile; composition roof; concrete floors; \$28,649; Trost & Trost, Architects; V. E. Ware, Contr. (Previously noted.)

Va., Lynchburg.—Virginia Theological Seminary and College will erect \$100,000 administration building; 80x100 ft.; 3 stories; brick; terra-cotta trim; metal roof; concrete and wood floors; hollow fireproof tile; interior tile; metal ceilings; safes; steam heat; electric lights (subbids for heating and lighting not approved); R. C. Archer, Archt., 208 Church St. Norfolk; Bowling & Forbes, Contrs., Lynchburg. (Previously noted.)

W. Va., Keyser.—School Board will erect 2-story 12-room high school; 97x162 ft.; brick; stone trim; stone foundation; tile floors; wood joists; total cost \$225,000; will complete front building at present at cost of about \$150,000; Hersh & Shellar, Architects, Commerce Bldg., Altoona, Pa.; Snider Bros., Contrs., Keyser. (Lately noted.)

Stores.

Ala., Montgomery.—C. L. Ruth & Son will erect jewelry store; \$49,000; 20x115 ft.; brick, hollow fireproof tile and Bedford stone; tin roof; Linotype, hardwood and concrete floors; interior tile; metal doors; wire glass; vaults; steel sash and trim; ventilators; steam heat. American Radiator Co., \$1100; electric fixtures and wiring, \$2000; 2 dumbwaiters and 1 sidewalk elevator; Frank Lockwood, Archt.; Thos. Purvis, Contr. (Lately noted.)

Ark., Marianna.—Mann & Mixon will rebuild 2 stores lately noted burned; brick and terra-cotta; concrete floors; tar and gravel roof; cost about \$120,000; W. C. Jennings, Contr.,

Marianna. Address Mann & Gatling, Architects, Scimitar Bldg., Memphis, Tenn.

Miss., McComb.—Gatlin Bros. will expend \$20,000 to remodel front of building and install equipment; Binswanger & Co., Memphis, Tenn., contract to install plate-glass front; Grand Rapids Show Case Co., Grand Rapids, Mich., interior equipment.

N. C., Charlotte.—W. F. and W. C. Dowd will install plate-glass fronts, concrete and pine floors, partitions, electric lights, etc., in stores on W. 4th St.; J. P. Propst, Contr.

Okla., Henryetta.—V. V. Kingsbury and W. R. Wilson will erect \$35,000 building; stores on ground floor, offices on second; 40x80 ft.; red-brick walls with buff-brick facing; tile roof; double oak floors; concrete sidewalks; electric lights; Raymond Kerr, Archt., Morgan Bldg.; J. Lafe Lang, Contr.

Va., Cape Charles.—W. E. Wilkins will erect \$35,000 store and apartment building; 3 stories; 35x100 ft.; brick; H. Robt. Diehl, Archt., New Monroe Bldg., Norfolk; C. H. Legg, Contr., Cape Charles. (Lately noted.)

Va., Newport News.—Myers Bros. will alter and erect addition to store lately noted burned; 3 stories; \$10,000; J. W. Davis, Contr., Law Bldg., Norfolk. (Lately noted.)

Theaters.

Tenn., Chattanooga.—Tennessee Enterprise Co. will erect \$150,000 theater on Broad St., between 7th and 8th Sts.; fireproof; Parks & Co., Contrs.

Va., Franklin.—Franklin Amusement Corp. will erect \$25,000 moving-picture theater; 45x99 ft.; brick; tin roof; concrete floors; metal ceilings; ventilators; steam heat, \$2200; electric lights; Riddick & Breeden, Architects, Suffolk; E. C. Smith, Contr., Franklin. (Previously noted.)

Warehouses.

Va., Rosslyn.—Washington Paper Stock Co., Southern Bldg., Washington, D. C., will erect \$15,000 warehouse; 60x30x24 ft.; concrete and tile; asbestos roof; concrete floors; electric lights; electric elevator, \$3400; C. B. Rafter, Archt., Hibbs Bldg.; Fletcher Fireproofing Co., Contr., Davidson Bldg., both Washington. (Lately noted.)

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Bags (Mail).—T. W. Lanier, Martinsville, Va.—Names and addresses mfrs. of canvas mail pouches and bags.

Bedding Machinery.—Roland Jones, Nacogdoches, Tex.—Names and addresses manufacturers bedding machinery.

Belting, etc.—Port of New Orleans Commissioners, W. O. Hudson, Prest., 1 Canal St., New Orleans, La.—Bids until Jan. 26 to furnish 600 ft. of 40-in. 5-ply belting and 1000 No. 1 Smith's patent fasteners for grain elevators; plans with J. W. Westerfield, Supr. of Purchase.

Boilers.—Robert L. Westphalen, 4217 Calumet Ave., Chicago, Ill.—One or two 300 H. P. boilers, 150 lbs. pressure.

Boring Bar.—Saml. T. Williams, 223 N. Calvert St., Baltimore, Md.—To purchase or hire portable cylinder boring bar suitable to re-bore a cylinder 17½ in. diam., 26 in. long; also to release piston valve seal 9½ in. diam.

Brick.—Rev. Wm. A. Borum, Pastor and Chmn. Building Comm. First Baptist Church, Natchez, Miss.—Prices on tapestry brick for church; 80x100 ft.

Brick.—Virginia Building Material Co., Richmond, Va.—To correspond with mfrs. of common and face brick, with view to representation.

Bridge Construction.—South Carolina Highway Comsn., Columbia, S. C.—Will soon invite bids on bridge across Savannah River.

Bridge Construction.—Navarro County, W. E. Slaughter, Auditor, Corsicana, Tex.—Bids opened Jan. 20 to build trestle across steel bridge on Chambers Creek, in Road Dist. No. 1.

Bridge Construction.—South Carolina Highway Comsn., Columbia, S. C.—Will invite bids on superstructure over main channel of Santee River; steel bridge, with approaches, will cost \$850,000.

Bridge Construction.—State Highway Comsn., Greensboro, N. C.—Bids until Jan. 25 to build bridges and culverts in Randolph County; F. A. No. 101-B.

Bridge Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to build steel bridge over Potomac Run, with alternate bids on concrete and timber floor; also reinforced concrete bridge over Accackee Creek on State Road No. 1 in Stafford County, Virginia Project No. 88; plans, etc., on file at Richmond, G. P. Coleman, Commr., and Resident Engr., Fredericksburg, Va.

Bridge Construction.—Santee Bridge Commissioners, W. K. McDowell, Chmn.,

Charleston, S. C.—Bids until Feb. 17 to construct main spans of steel highway bridge over Santee River between Williamsburg and Berkeley counties; one 80-ft. through swing span and two 120-ft. through fixed spans with concrete substructure; 374,000 lbs. structural steel; 36,900 lbs. reinforcing steel; Federal-aid Project No. 85, Section A; plans, etc., with Wm. Burguson, Secy. Comsn.; Ambrose Harwell, Div. Engr., 30 Broad St., both Charleston, and State Highway Engr., Columbia, S. C.

Bridge Construction.—Beaufort County Supr., W. F. Sanders, County Supr., Beaufort, S. C.—Bids until Jan. 28 to reconstruct bridge over Whale Branch, including construction of 6 concrete pile bents, etc.; Federal-aid Project No. 33; plans, etc., on file at Beaufort, with Ambrose Harwell, Div. Engr., 30 Broad St., Charleston, S. C., and State Highway Engr., Columbia, S. C.

Bridge Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to build reinforced concrete bridge over Cook's Creek on State Road No. 10 in Roanoke County, Virginia Project No. 104; plans, etc., on file at Richmond.

Bridge Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—

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Bids until Jan. 21 to build 2 steel and reinforced concrete bridges over Glade Creek on State Road No. 10 in Botetourt County, Virginia Project No. 104; plans, etc., on file at Richmond.

Bridge Materials.—Cherokee County Commissioners, E. F. Lipscomb, Supvr., Gaffney, S. C.—Bids until Jan. 20 to furnish materials for building 20 to 25 steel bridges.

Building Materials.—J. R. Parmlinter, Greenfield, Tenn.—Prices on plaster board, steel lath, Portland cement, plastering etc.

Cans (Ice).—Gulf Machinery & Investment Co., New Orleans, La.—264 ice cans, 11½x 22½x45; number of iron, sides 16, bottom 14; delivery by Feb. 16; if new, prefer Wall or Niles; if second-hand, must be good condition.

Cane (Chair).—D. O. Adams, Ponce de Leon, Fla.—Cane used for making chair seats.

Castors (Wood and Steel).—H. & A. Wood Products Co., H. J. Albright, Secy., St. Petersburg, Fla.—Prices and catalogs of steel and wood castors for iron and wood beds, dressers, etc.; ball bearing preferred.

Ceiling (Sheet Metal), etc.—Big 6 Installing Service Co., M. M. Ryeburn, Mgr., Cincinnati, O.—Sheet metal ceiling and siding.

Cement.—B. H. Gruver, 616 Union Trust Bldg., Washington, D. C.—Prices on 2000 lbs. of cement.

Cleaner (Street).—Ellis Motor Co., Clinton, S. C. Names and addresses mfrs. gasoline motor propelled street cleaner.

Crane.—Hackley Morrison Co., 16½ N. 9th St., Richmond, Va.—Byers auto crane with clam-shell bucket.

Crusher.—City of Charleston, S. C., J. H. Dingle, Engr.—Bids until Jan. 18; portable or semi-portable rock crusher, suitable for crushing cobblestones and granite paving blocks.

Crushers.—Georgia Cement & Stone Co., 315 Healy Bldg., Atlanta, Ga.—Prices on 36x60 or larger jaw crusher; No. 18 style K gyratory crusher or its equivalent.

Crushing Machinery.—Hackley Morrison Co., 16½ N. 9th St., Richmond, Va.—Mchy. for crushing feldspar and mica.

Curtains.—Rev. Wm. A. Boram, Pastor and Chrmn. Building Comm. First Baptist Church, Natchez, Miss.—Prices on heavy (Pullman car) curtain material for church.

Dehydration Machinery.—R. T. Lipscomb, Norfolk, Va.—Names and addresses mfrs. of dehydrating machinery.

Dredging.—Atchafalaya-Teche-Vermilion Co., Crowley, La.—Bids until Jan. 30 to dredge 330,000 cu. yds. in Bayou Teche, between Port Barre and Nottleyville, La.; V. E. Smith, Engr., Lafayette, La.

Drilling Machinery.—Railroaders' Oil Co., Elsiey Bldg., New Albany, Ind.—Prices on field supplies and drilling outfits including pipe, etc.

Electrical Equipment.—B. H. Gruver, 616 Union Trust Bldg., Washington, D. C.—Prices on 10,000 ft. of No. 14½ BX electric cable and 1000 ft. of 4 BX electric cable.

Engines.—John G. Duncan Co., 101 E. Jackson St., Knoxville, Tenn.—Dealers' prices on 4, 5 and 6 H. P. second-hand vertical and horizontal steam engines; immediate delivery.

Engine.—Jos. L. Pearson, Keysville, Va., R. D. No. 2.—New, second-hand or rebuilt 15 to 20 H. P. kerosene-oil engine.

Engine.—R. P. Johnson, Wytheville, Va.—Prices on 35 H. P. double-cylinder double-drum hoisting engine with boiler; good second-hand condition and ready for prompt shipment.

Engine.—Myron D. Kizer, 959 E. 61st St.,

Chicago, Ill.—Resale prices on 1000-1200 H. P. simple noncondensing engine.

Engine.—L. F. Hobbs, Norfolk, Va.—Second-hand 10x12 D. D. hoisting engine, with boiler; first-class condition.

Excavator.—Roy C. Whayne Supply Co., 608 W. Jefferson St., Louisville, Ky.—Trench excavator to cut 24 or 30 ft. wide by 15 ft.

Fabric Pulling Machinery.—See Machine-shop Equipment.

Feeds, etc.—Arkansas Mill & Grain Co., C. C. Cherry, Mgr., Hoxie, Ark.—Corn, oats, bran, mix feeds, seeds, etc.

Filler.—Roy C. Whayne Supply Co., 608 W. Jefferson St., Louisville, Ky.—Back filler in good condition.

Foundry Equipment.—H. L. Lambert, Box 346, Huntington, W. Va.—Equipment for mfrs. frogs, switches, machine bits, etc.

Generators.—Myron D. Kizer, 959 E. 61st St., Chicago, Ill.—Resale prices on belted generators, 3-phase, 60-cycle, 2300 volts, 250-450 K. W. and 800 to 1000 K. W.

Generator.—Robert I. Westphalen, 4217 Calumet Ave., Chicago, Ill.—160 K. W. 440-volt 60-cycle 3-phase A. C. with 250 H. P. engine.

Generator Sets.—Myron D. Kizer, 959 E. 61st St., Chicago, Ill.—Resale prices on 200-250 K. W. motor generator sets, consisting of 3-phase 60-cycle 440-volt synchronous motor, direct connected to 125-250-volt generator.

Handle Machinery.—W. M. Pinnix, Newbern, N. C.—Names and addresses mfrs. of mchy. to make plow handles.

Heating Plant.—B. H. Gruver, 616 Union Trust Bldg., Washington, D. C.—Prices on boilers and radiation for 26 dwellings.

Heater (Water).—Collins Granite Co., R. F. D. No. 4, Danville, Va.—Closed type feed-water heater having 6-in. steam inlet.

Hoist.—A. E. Ittner Co., Albany, Ga.—Prices on 2-drum steam hoist.

Iron (Angle).—E. C. Klingman, Greensboro, N. C.—To correspond with mfrs. lightweight nickel-plated angle iron.

Laundry Equipment.—Mrs. Sarah Jones, Haysville, N. C.—Small laundry outfit.

Laundry Machinery.—E. H. Anderson, Eutaw, Ala.—To correspond with mfrs. of laundry machinery.

Locomotive.—Thomas F. Carey Co., 120 Liberty St., New York.—65-ton 6-wheel switching locomotive, not over 12 years old; 150 lbs. pressure; good condition.

Machinery Equipment.—Board of Awards, Howard Bryant, Act. Prest., City Hall, Baltimore, Md.—Bids until Jan. 26 at office Richard Gwinn, City Register, for mchy. equipment for Department of Education; specifications at office Board of School Commissioners, Madison and Lafayette Aves.

Machine-shop Equipment.—Virginia-Carolina Rubber Co., Robt. J. Bell, Prest., 10 N. 19th St., Richmond, Va.—Bids during Feb. Mar. and Apr. to install fabric-pulling mchy., moulds, presses, cutting machines.

Mixer.—A. E. Ittner Co., Albany, Ga.—Prices on concrete mixer; 1 bag, 7 cu. ft. orange peel.

Molds.—L. A. Hinman, Hinman & Quinn, Crisfield, Md.—Poured block machine or molds to shape the blocks when poured into dry.

Paint.—B. H. Gruver, 616 Union Trust Bldg., Washington, D. C.—Prices on white lead and linseed oil for 26 dwellings.

Paper.—Van De Putte Jonckheere, Canal 18-19, Alost, Belgium.—To correspond with mfrs. of yellow crepe paper for decorations and black packing paper.

Paving.—Board of Awards, care City Register, Baltimore, Md.—Bids until Jan. 26 to grade, curb and pave streets listed in Contracts Nos. 179-OC, 180-OC and 181-OC; sheet asphalt and old granite block on concrete base; specifications, etc., with Paving Comsn., 214 E. Lexington St.

Paving.—City, A. B. Beasley, Mayor, Randleman, N. C.—Bids until Jan. 20 to construct streets; 25,000 sq. yds. sheet asphalt, bitulithic, bituminous concrete, Kentucky rock asphalt, etc.; information, etc., from A. E. Taplin, Engr., High Point, N. C.

Paving.—City, E. A. Beck, City Mgr., Lynchburg, Va.—Bids until Jan. 29 to improve Church St. between 5th and 13th Sts.; alternate bids on concrete, sheet asphalt and brick; 10,000 sq. yds. reinforced concrete; 12,000 sq. yds. brick; 9100 sq. yds. sheet asphalt; 900 sq. yds. brick gutter; plans, etc., on file with City Engr.

Paving.—Norfolk County Commrs., Portsmouth, Va.—Will probably invite bids in spring on concrete road at Ocean View from stop 7 to stop 16 along cottage line; also pave Chesapeake Ave.; R. B. Preston, Engr.

Paving.—City, S. A. Davis, Clk., Athens, Ala.—Bids until Feb. 4 to grade and construct 37,204 lin. ft. concrete curb and gutter; 22,637 sq. yds. macadam pavement treated with bitumen; 46,170 sq. yds. water-bound macadam.

Piling.—A. E. Ittner Co., Albany, Ga.—Prices on second-hand 12-ft. steel sheet piling in locality of Colquitt, Ga.

Pipe.—Dist. Commrs., Room 509, Dist. Bldg., Washington, D. C.—Bids until Jan. 24 to furnish and deliver to Water Dept., 200 tons cast iron coated water pipe; specifications with Purchasing Officer, Room 320, Dist. Bldg.

Pipe Machinery.—Coca-Cola Bottling Co., F. L. Johnson, Mgr., Statesville, N. C.—Names and addresses mfrs. of machines for making pipes from fig, briar and apple wood.

Presses.—Hackley Morrison Co., 16½ N. 9th St., Richmond, Va.—Three punch presses, stroke 1½, bed opening 4x6 in., weight 750 lbs.

Pump.—A. E. Ittner Co., Albany, Ga.—Prices on pulsometer pump.

Pump (Boiler Feed).—John G. Duncan Co., 101 E. Jackson St., Knoxville, Tenn.—Catalogs and jobbers' prices on boiler-feed pump, suitable for 20 H. P. boiler or larger, to work under head of 500 lbs. steam pressure; immediate delivery.

Pump and Motor.—City of Lafayette, La., R. L. Mouton, Mayor.—Bids until Feb. 2 to furnish deep-well pump and motor; J. B. McCrary Co., Engr., Atlanta, Ga.

Pump (Power).—Superior Chemical Co., Box 1233, Joliet, Ill.—Belt-driven 150-gal. power pump, 200 lbs. pressure.

Pulleys.—See Woodworking Machinery.

Rails.—Geo. B. Todd, 421 Union St., Norfolk, Va.—Names and addresses mfrs. of 24-in. gauge industrial rails.

Refining Equipment (Sugar-cane).—L. W. Hagg, care of Everett Hotel, Jacksonville, Fla.—Names and addresses engineers and manufacturers sugar-cane refining equipment and machinery.

Road Construction.—South Carolina State Highway Comsn., Columbia, S. C.—Bids until Jan. 26 to construct 15.7 mi. sand-clay road from Walterboro to Jacksonboro, in Colleton County; \$120,000.

Road Construction.—Kershaw County Commrs., Camden, S. C.—Bids until Jan. 31 to construct 8.872 mi. Camden-Bishopville road and bridges thereon; 21,832 cu. yds. sand-clay surfacing; Federal-aid Project No. 91; plans, etc., with W. L. Kirkland, County

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Engr., Camden; J. D. Gregory, Div. Engr., and State Highway Engr., both Columbia, S. C.

Road Construction.—State Highway Commission, Greensboro, N. C.—Bids until Jan. 25 to construct 6.98 mi. road between Mocksville and Winston-Salem. In Davie County.

Road Construction.—Campbell County Supvrs., Rustburg, Va.—Bids until Feb. 1 to construct 34.07 mi. soil roads; specifications, etc., with County Clk., Rustburg, Va., and State Highway Commr., Richmond, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 8.01 mi. soil road on State Road No. 13 in Powhatan County, Virginia Project No. 82; plans, etc., on file with Highway Comsn., G. P. Coleman, Commr., and with Resident Engr.; both Richmond.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 1.25 mi. bituminous resurfacing and widening streets through town of Graham on State Road No. 11 in Tazewell County, Virginia Project No. 8-70; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Bristol, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 2.58 mi. concrete road on State Road No. 4 in Accomac County, Virginia Project No. 38; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Suffolk, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 6.42 mi. water-bound macadam road on State Road No. 9 in Augusta County, Virginia Project No. 69; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Staunton, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 2.91 mi. bituminous macadam road on State Road No. 2 in Buckingham County, Virginia Project No. 80; plans, etc., on file at Richmond, G. P. Coleman, Commr., and Resident Engr., Lynchburg, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 1.92 mi. concrete road on State Road No. 1, Virginia Project No. 71; alternate bids on 2.78 mi. bituminous macadam road on State Road No. 21 in Fairfax County, Virginia Project No. 112; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Manassas, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 5.40 mi. gravel road on State Road No. 7 in Spotsylvania and Orange counties, Virginia Project No. 92; plans, etc., on file at Richmond, G. P. Coleman, Commr., Richmond.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 1.62 mi. concrete and 3.61 mi. gravel road on State Road No. 1 in Stafford County, Virginia Project No. 88; alternate bids will be considered on whole road to be surfaced with concrete; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Fredericksburg, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 7.42 mi. concrete road on State Road No. 10 in Nansemond and Norfolk counties, Virginia Project

No. 64-A; plans, etc., on file at Richmond, G. P. Coleman, State Highway Commr., and with Resident Engr., Suffolk, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 7.86 mi. soil road on State Road No. 20 in Chesterfield County, Virginia Project No. 8-61; plans, etc., on file with Highway Comsn., G. P. Coleman, Commr., and Resident Engr.; both Richmond, Va.

Road Construction.—Virginia State Highway Comsn., 116 S. 3d St., Richmond, Va.—Bids until Jan. 21 to construct 4.26 mi. bituminous macadam road on State Road No. 14 in Pittsylvania County, Virginia Project No. 86; plans, etc., on file at Richmond, G. P. Coleman, Commr., and with Resident Engr., Lynchburg, Va.

Road Construction.—State Highway Commission, Greensboro, N. C.—Bids until Jan. 25 to build 11 mi. highway between Mt. Airy and Winston-Salem, in Stokes County; F. A. No. 121.

Road Machinery.—Comms. of Roads and Revenues, L. A. Hargraves, County Clk., Pearson, Ga.—Road machinery.

Presses.—See Machine-shop Equipment.

Sand-blast Equipment.—Dixie Decorative Plaster Works, 160 Walton St., Atlanta, Ga.—Small sand-blast outfit for sand-blasting cement products.

Sawmill.—Jos. L. Pearson, Keysville, Va., R. D. No. 2.—New or second-hand short-log sawmill taking up to 10-ft. lengths.

Scale (Beam).—Gilbreath Bros., Guntersville, Ala.—Names and addresses mfrs. of Robidoux beam scale for weighing cotton.

Sewer Construction.—City of Bartlesville, Okla., John Johnstone, Clk.—Bids until Jan. 20 to construct sanitary sewers in Dists. No. 13, 14 and 15.

Sewers.—City of Vinita, Okla.—Bids until Jan. 18 to construct 2160 lin. ft. 8-in. sanitary sewers on Brown St. from Tahlequah north to Clyde St.; Leo Ashby, City Engr.

Sewer.—City of Tulsa, Okla., Mrs. Frank Seaman, City Auditor.—Bids until Jan. 17 for construction of sanitary sewer, including laterals, connections and other appurtenances; plans, etc., on file.

Sewers.—City of Martinsburg, W. Va., John H. Zirkle, Recorder.—Bids until Feb. 15 to construct 12,500 lin. ft. sanitary sewers; plans, etc. from T. W. Sparrow, Commr. of Streets.

Sewer.—Water-works and Sewerage Commission, Clio, S. C.—Invites bids to construct sewer and water system for town of 1008 inhabitants.

Shafting.—See Woodworking Machinery.

Shovels (Steam).—Roanoke Sales Corp., Roanoke, Va.—Several used steam shovels with caterpillar traction, $\frac{3}{4}$ -yd. to 1-yd. dipper; good condition; description, cut, location and time of shipment.

Skidder (Self-propeller).—Southern Locomotive & Equipment Co., 1002 Empire Bldg., Atlanta, Ga.—Clyde overhead self-propelling skidder of modern construction.

Tank.—T. M. Spinks, Propr. Shubuta Ice Factory, Shubuta, Miss.—5-ton freezing tank.

Tank.—Bix 6 Installing Service Co., M. M. Ryeburn, Mgr., Cincinnati, O.—Concrete septic tank.

Threshing Machines.—Southern Implement Mfg. Co., Columbus, Ga.—Names and addresses mfrs. threshing machines.

Tile (Building).—F. M. Hughson, Box 367, Roanoke, Va.—Names and addresses mfrs. of building tile.

Turntable.—Collins Granite Co., R. F. D.

No. 4, Danville, Va.—Turntable for industrial track 36-in. gauge, 4-ft. x 6-in. diam.

Water and Electric Plant.—Pompano-by-the-Sea Co., A. T. Barkdull, Secy, 39 N. E. 2d Ave., Miami, Fla.—Combination water and electric plant for 100 houses.

Water-works.—Water-works and Sewerage Comsn., Clio, S. C.—Invites bids to construct water and sewer system for town of 1008 inhabitants.

Water-works.—Water Commrs., W. E. Aiken, Supt., Union, S. C.—Bids until Jan. 27 to lay $1\frac{1}{2}$ mi. 2-in. pipe line; construct 3,000,000-gal. storage reservoir, concrete settling basin, headhouse, etc.; plans, etc., on file or with Carolina Engineering Co., Engr., Washington, D. C.

Welding Gas.—W. G. Howard & Sons, Blackville, S. C.—Names and addresses mfrs. gas and oxygen for welding.

Well Drilling.—City of Houston, Tex., A. E. Amerman, Mayor.—Bids until Jan. 17; 2 deep wells at central water plant; plans with City Engr.

Window Screens.—C. A. Sullivan, Hubbard Grocery Co., Charleston, W. Va.—Prices on window screens for residence.

Woodworking Machinery.—J. H. Taylor, Route 1, Maryville, Tenn.—Woodworking machinery, including shafting, pulleys, hangers, Dowel machinery.

Railroad Construction

Railways.

Ala., Ashville.—Samuel High, R. R. Hodges and others are reported working on a plan for the construction of a branch line from Whitney to Ashville, 4 mi., to give the latter connection with the Southern Railway.

Fla., West Palm Beach.—Florida East Coast Railway is actively working on plans for the ultimate extension of its Lake Okechobee branch from Okechobee to West Palm Beach, about 60 mi. Rights of way are being obtained. H. N. Rodenbaugh is Ch. Engr. at St. Augustine, Fla.

Tex., Uvalde.—Uvalde & Northern Ry. has laid 12 mi. of track of its line to Camp Wood.

W. Va., Madison.—Pond Fork & Bald Knob R. R. Co., recently authorized to increase capital stock from \$50,000 to \$250,000, will build line from mouth of West Fork, in Boone County, W. Va., up that stream 4 mi. Connection with Pond Fork Ry. Boxley Bros. of Huntington, W. Va., have contract; C. W. Campbell, Prest.; C. N. Davis, Vice-Prest.; M. L. Burnett, Secy. and Treas.; M. E. Carter, Ch. Engr.; all of Huntington.

W. Va., Morgantown.—Morgantown & Wheeling Ry. Co. has, it is reported, let contract to B. M. Chaplin & Co. of Morgantown to build 1 mi. second track from Randall to Osage, including two small steel bridges.

Street Railways.

Okla., Tulsa.—A. I. Thompson, Ch. Engr. for the Oklahoma State Corporation Commission, will recommend, it is stated, that the Tulsa Street Ry. Co. make improvements as follows: Double-track Main St. line; build an extension of two blocks, extend a track to Kendall, extend present Kendall lines to northeast part of city; also some other double-tracking. Morris McGrath is Manager of the railway.

Tex., Greenville.—City Council proposes extensions of belt lines of the city street railway, including line to Wesley College and another to Peniel.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

General Sales Manager Named.

The Goulds Manufacturing Co., Seneca Falls, N. Y., manufacturers of Gould's pumps, announce the appointment of Edward S. Jenison as acting general sales manager to succeed W. E. Dickey, whose retirement from business is also announced as of January 1. For the last five years Mr. Jenison has been manager of the company's Philadelphia office.

Steel Purification, Etc.

A. A. Rackoff, engineer, Postoffice Box 2, Wilkesburg, Pa., announces that beginning January 1 he became engaged in private practice for designing, developing, estimating and supervising of the latest method of purifying liquid steel for various grades at the ingot mold pouring course in open-hearth plants. This method, he observes, "will increase production, save labor, purify the liquid steel and reduce waste. Present plants can be changed gradually without interfering with their production." He is also specializing in a new type of reversing gears for coke-oven batteries for all moveable parts of the oven, and for this device economies are similarly claimed.

Branch Office Opened.

The James Leffel & Co., Springfield, O., builders of water-wheel turbines, engines and boilers, opened on January 1 a sales and engineering office at No. 615 Plymouth Bldg., Minneapolis, Minn. This office will be under the charge of M. S. Bassett, who has been for 15 years connected with the engineering and sales departments of the home office at Springfield.

Winches, Capstans, Windlasses, Etc.

A contract has been completed by the S. Flory Manufacturing Co., Bangor, Pa., for 45 electric drive all-steel deck winches for ships of the line. The winches are of both simple and compound-gear types, and they range in size from rope pulls of 3000 pounds to 20,000 pounds on a single whip. The company also constructed four compound-gear electric drive steel deck winches for the Brazilian battleship Sao Paulo, besides four electric drive compound-gear deck winches for the new U. S. battleship California. There are, furthermore, contracts on hand, including four electric drive heavy-duty capstans for the battleships South Dakota, Indiana, North Carolina and Montana, now under construction; also for an electric drive anchor windlass weighing about 250,000 pounds, to handle 3½-inch stud link chain for the new battleship Massachusetts, also building. The company will likewise make the electric deck winches for the U. S. destroyer tenders Dobbin and Whitney, the deck winches for the U. S. gunboat No. 22, as well as a number of deck winches, windlasses and capstans for privately owned vessels. The principal sales office is at 95 Liberty St., New York city.

Awarded the Perkin Medal.

In recognition of many inventions through which he has applied chemistry to the service of mankind, Dr. Willis R. Whitney was on January 14 presented with the Perkin medal, one of the greatest honors in science, as it is given for the highest achievement in

applied chemistry. The medal is named for Sir William Perkin, the distinguished British chemist, who discovered the first processes for the manufacture of aniline dyes from coal tar. The presentation was made at Rumford Hall, 50 E. 41st St., New York, by the American Section of the Society of Chemical Industry, the American Chemical Society participating in the award. Dr. Whitney is perhaps best known to the public for perfecting a detector for warning of the approach of submarines, and he also did much to develop radio telephony and telegraphy during the recent war. Considered from a professional point of view, it is said that his most notable achievement was the creation and promotion of the research laboratory of the General Electric Co. at Schenectady, N. Y.

Has New Business Connection.

Frank D. Horton, who was associated with the Carolina Portland Cement Co. of Birmingham for ten years, and who was recently with the Central Cement & Supply Co. of Mobile, has just returned to Birmingham to become associated with the Standard Fuel & Material Co. there, whose offices are at 719-26 Chamber of Commerce Bldg., with warehouse and yards at Avenue B and 16th St. South. This company, which was organized last June, has, it is stated, met with extraordinary success during its six months' existence. C. G. Kershaw is president; J. I. McCants, vice-president; W. D. Lewis, Jr., general manager; W. H. Brooks, treasurer; J. L. Brooks, secretary, and E. B. Lewis, traffic manager.

Partnership Formed.

G. Lloyd Preacher, architect and engineer, announces the association with him of Geo. Harwell Bond, J. F. Wilhoit and Nicholas Mitchell to practice architecture and engineering under the name of G. Lloyd Preacher & Co., with offices in the Healey Bldg., Atlanta, Ga., and the Masonic Bldg., Augusta, Ga., increased practice demanding this partnership.

Change of Name.

The Great Western Contracting Co., Kansas City, Mo., representatives for the Conveyors Corporation of America, Chicago, have changed the name of their organization to the Rawlings Industrial Equipment Co. They are sales engineers for the manufacturers of power plant machinery, and besides handling coal and ash conveyors for the Conveyors Corporation, are also representing the Springfield Boiler Co., Springfield, Ill., and the Cooling Tower Co., New York city.

Removal of Office.

The Northeastern Construction Co. of 101 Park Ave., New York, announces that it has removed its local district office to the Lexington Bldg., Baltimore, where it will continue with increased facilities its business of engineering and contracting.

Four Companies Now Under One Head.

According to announcement, the Trojan Powder Co., Allentown, Pa., on January 1 took over and is now conducting the entire business heretofore conducted by it and its

associated companies, there having been four organizations, viz., the Pennsylvania Trojan Powder Co., the California Trojan Powder Co., the Trojan Chemical Co., and the Trojan Powder Co. It is stated as the reason for the change that the successful development of the business has reached the point where such considerations as increased economy of operation and further and better service to the trade make it desirable to carry on the business hereafter as a unit. There will not be any change in either control or personnel.

Business Change.

William R. Elden, who was with the Lidgerwood Manufacturing Co. for 14 years as engineer and salesman at their Chicago office, has resigned to join the organization of Sauerman Bros., 322 S. Dearborn St., Chicago, where his experience in designing and specifying hoisting engines will be utilized in preparing specifications for the power equipment furnished to purchasers of Sauerman dragline cableway excavators and beltless power scrapers.

Trade Literature.

Calendar.

The Texas Company, Houston, Tex., and New York city, have issued an excellent and practical wall calendar, the upper part of which is a large reproduction in colors of the trade-mark of Texaco asphalt, petroleum and its products.

A Chronicle of Success.

An exceedingly attractive booklet is the P. & H. Chronicle, issued by the Pawling & Harnischfeger Company, Milwaukee, Wis., manufacturers of machinery, including electric cranes and hoists, monorail overhead conveying systems, horizontal drilling and boring machines, and excavating machinery, the latter comprising wheel and ladder-type excavators, tampers, back fillers, grab buckets, etc. The history of the plant is narrated from its beginnings in 1884 to 1920. Like many another large company, it was very small when it started, occupying an exceedingly modest two-story frame building. Now a bird's-eye view of the main plant at Milwaukee shows how it extends over many acres, with numerous buildings. There are sundry pictures of the interior of the works, besides reproductions of photographs of officials. It is an unusually fine publication. This company has also just published for distribution a new edition (dated January, 1921) of its Bulletin 5-X on the P. & H. excavator crane No. 265. It describes the many and various uses of this general utility machine, the pictures displaying the excavator at work with different types of buckets, a lifting magnet, lumber grapple, sling chains, etc.

A Century and a Quarter of Industry.

The one hundred and twenty-fifth anniversary of Bird & Son, Inc., manufacturers of the "Neponset" products, East Walpole, Mass., is appropriately marked by the publication of a book presenting a history of the business from its earliest days to the present. George Bird, a native of Union, Maine, purchased in 1755 a water-power in the towns of Needham and Dover, Mass., and built a paper mill. In 1799 he sold part of the mill in Needham, and in 1803 bought in Dedham, Mass., another water-power and paper mill, operating it until 1811, when it was burned. In 1812 he bought water-power rights and land on the Neponset River in Walpole, and the business now carried on by Bird & Son has been located on this land since that date. The story

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

is very complete and interesting and abounds with appropriate illustrations. The company manufactures roll roofings, waterproof papers, wall board, asphalt shingles, floor coverings, fiber shipping cases, paper boxes and special papers. The book is finely made, and is of most attractive appearance.

Vertical Pumps.

Two bulletins lately issued by the Aldrich Pump Co., Allentown, Pa., are timely and important. Pump Data No. 47 illustrates and describes pumps termed "modified pot chamber water-end type." Their design makes them especially applicable, it is stated, for handling moderate quantities against pressures of 500 pounds or more. The first page has an illustration of a single-reduction, direct-gear pump with motor on the side. Pump Data No. 49 relates to pumps of the same type, but of larger capacities, one of these larger pumps being similarly illustrated. These are vertical triplex power pumps, but the company also makes quintuplex power pumps and other hydraulic machinery.

Centrifugal Pumps.

Earle centrifugal pumps, made by the Earle Gear & Machine Co., Philadelphia, "are built to meet any conditions for which centrifugal pumps of the better class are adapted, with the exception of deep-well pumping," according to a catalog just issued. They possess certain distinctive features of advantage, and the descriptions and illustrations in the book present them clearly and attractively. The catalog is finely prepared and printed.

Transformers.

Bulletin 124 of the Wagner Electric Manufacturing Co., St. Louis, Mo., is exponent of the instrument transformers made by this organization. It contains two large pictures, one of which shows the back of a switchboard displaying the mounting of Wagner series transformers, and the other is also a switchboard view showing potential transformers of the same make. Current transformers are illustrated in smaller halftones, and there are sundry diagrams to supplement the reading matter.

Book Reviews.

The Americanization of Edward Bok. An Autobiography. New York: Charles Scribner's Sons, 1920. Price 25.

In this portly volume of more than 450 pages, Edward W. Bok, for 50 years editor of the Ladies' Home Journal, tells the story of his life in America. He has adopted the wise expedient of detaching himself as much as possible from the subject of his narrative by writing in the third person, so that egotism, which is always inseparable from a book of this character, is minimized. It is only in the last two chapters that he uses the personal pronoun "I," and that is when he is engaged in summing up his Americanization, for although the progress of his citizenship is seen all through the preceding chapters, its concreteness is only visible in the conclusion. The story is most interesting. It reveals Edward Bok—for so he abbreviates his name in connection with his life-work as editor and publicist—as a remarkable personality. As a boy he seems to have possessed an unusually distinct and accurate sense of the relative value of people and things. Moreover, he had poise, and his realization of life and its meanings was evidently keen. Back of all this was Dutch determination and courage, for he was a native of Holland, and arrived in this country with his parents on September 20, 1870, when only six years of age. He

did not understand English, but going to a public school, he soon learned the language from his boyish associates and also with parental aid. His beginning of work was most modest. It came before he left school, a job performed for a baker in his spare time for 50 cents a week. When 13 years of age he left school and went to work as an office boy for the Western Union Telegraph Co. By the time he was 16 he was a stenographer and worked for Jay Gould before he left the company's employ. A great fondness for collecting autographs led him to approach prominent men and women as opportunity offered, and this enabled him to acquire information concerning them and their careers. His first work of a literary nature was writing a hundred biographies of 100 words each about prominent Americans for a lithographic concern, to be used on cigarette pictures. Next he undertook the publication of theater programs, and finally he organized a weekly newspaper syndicate to send out letters by prominent people to papers in different parts of the country. This was after he had left the telegraph business and had gone to work with Henry Holt & Co., publishers, and his editorial activities were done outside of business hours. From this publishing-house he went to that of the Scribners, and some years later, in 1889, from their establishment to the editorship of the Ladies' Home Journal, which he saw grow to a monthly circulation of 2,600,000 copies. He retired in September, 1919, at the age of 56. It would be impossible within the limits of such a review as this to present much of the vital interest that this book possesses. Mr. Bok has the knack of making himself interesting when he writes; his autobiography is full of meat. By means of its pages, the reader will obtain glimpses of many prominent men and women of the world, sidelights upon their work and their character which are more than commonly entertaining, because they bear the earmarks of truth. In his conclusions concerning his views upon America he says: "We all have our pet notions as to the particular evil which is the 'curse of America,' but I always think that Theodore Roosevelt came closest to the real curse when he classed it as a lack of thoroughness," and, furthermore, Mr. Bok says that in this way America "is falling short with every foreigner that comes to her shores." Along this line his account of how this country and its ways impressed him as he neared manhood and for the several years following his majority deserves to be read by everyone. On the next to the last page of his story he says: "I wonder whether, after all, the foreign-born does not make in some sense a better American—whether he is not able to get a truer perspective; whether his is not the deeper desire to see America greater; whether he is not less content to let its faulty institutions be as they are; whether in seeing faults more clearly he does not make a more decided effort to have America reach those ideals or those fundamentals of his own land, which he feels are in his nature, and the best of which he is anxious to graft into the character of his adopted land?"

Transactions of the American Institute of Chemical Engineers. Volume XII, Part II, 1919. New York: D. Van Nostrand Company, 1920.

This book, which is of more than ordinary interest to the South, contains reprints of papers read at the Savannah meeting in December, 1919. It opens with an article entitled "Chemistry and the South," by President Arthur D. Little, in which chemical development in the Southern States is instructively considered. This is followed by an article written by David Wesson on "The

History and Development of the Cottonseed Oil Industry in America," this contribution being bountifully illustrated. Next comes a paper by Richard K. Meade, entitled "Economic and Mineral Resources of the South of Interest to Chemical Manufacturers." It treats of the various minerals and chemicals to be found in the South and presents a long list of mineral locations there. Andrew M. Fairlie contributes an article captioned "Some Developed Mineral Resources and Chemical Industries of the Southern States," considering especially fertilizers and their components. Other papers are: "Use of Rosin in Paint and Varnish," by Maximilian Toch; "Recovery of Soda Salt From Black Liquor," by Hugh K. Moore; "Some Developments in Chemical Engineering," by A. E. Marshall; besides several contributions concerning chemical manufacturing processes, accident prevention, etc., the writers including George A. Richter, Hugh K. Moore, Fred. C. Zeisberg, F. E. Dodge, F. H. Rhode, J. Glading Dailey and James R. Withrow. The volume, which is of more than 260 pages, is finely printed and substantially bound. It will be a valuable addition to the library.

Financial News

New Financial Corporations.

Ala., Tarrant.—Tarrant City Bank, capital \$25,000, organized with Robert Wharton, Pres. Ark., Searey.—Arkansas Land & Loan Co., capital \$7500, ineptd. with S. M. Acker, W. C. Scott, J. H. Ross.

Fla., Avon Park.—B. F. West Banking Co., capital \$20,000, organized with Jerry W. White, Pres.; Geo. D. Godwin, V.-P.; M. T. Whidden, Cashr.

Fla., Fort Lauderdale.—First National Bank, capital \$100,000, organized.

Fla., Miami.—Thomas A. Koons, Inc., capital \$10,000, organized with Thomas A. Koons, Pres.-Treas.; Louis A. Koons, V.-P.; Virginia Nell Koons, Secy.

Fla., Miami.—Clausen Investment Co., capital \$200,000, organized with Thos. J. Borgstesser, Pres.; Long Branch, N. J.: J. E. Schilling, V.-P., Miami, Fla.; Chas. Rosenkrans, Secy.; J. H. Davis, Jr., Treas., Long Branch, N. J.

Fla., Moore Haven.—Glades Abstract & Insurance Co., capital \$2000, organized with R. E. Kurtz, Pres.; W. L. Long, V.-P.; C. C. Klutz, Secy.-Treas.

Fla., Sanford.—Seminole Realty & Investment Corp., capital \$50,000, ineptd. with Geo. W. Knight, Edward Higgins, Geo. G. Her-ring.

Fla., Sanford.—Realty Loan Guaranty Co., capital \$50,000, ineptd. with J. D. Bowman, S. A. Hutchins, H. A. Cugin.

Fla., Tallahassee.—South Florida Finance Co., capital \$50,000, organized with R. B. Troy, Pres.-Gen. Mgr.; R. A. Quakernan, V.-P. and Secy.; O. B. Wakerman, Treas.

Fla., West Palm Beach.—Palm Beach Savings and Loan Assn., capital \$200,000, organized with S. C. Hall, Pres.; W. H. Pa Camara, V.-P.; H. E. Robinson, Secy.; W. J. Von Behren, Treas. (Supersedes recent item.)

Ga., Atlanta.—Eagle Investment Co., capital \$5000, ineptd. with C. D. Miller, W. G. West.

Ga., Atlanta.—Georgia Cotton Bank & Trust Co., organized by S. Guyt McLendon, has received \$1,000,000 subscriptions of capital stock, and privilege is given of increasing capital to \$2,000,000.

(Continued on page 136.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

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Two thieves of Coal— *But while the man steals pounds, the bare pipe steals TONS*

YOU guard against the human thief with watchmen, fences, locks, and all the complicated machinery of the law. Yet his pilferings are trivial.

But the chances are that you are not protected against the *dangerous thief—the steam pipe that is bare or covered insufficiently or with inferior insulation—the thief who by day and night is constantly making serious inroads on your most precious commodity—coal.*

Coal is too scarce, too high in price, too hard to get, for you to ignore any possibility of saving it. An adequate covering of 85% Magnesia will save so much coal that, at present prices, it will pay for itself in the course of a few months.

Think of it!—an investment that will pay one hundred per cent dividends in a few months and then will go on saving at the same rate for at least fifty years!

Send for the nearest pipe coverer. Have him make a survey of your power lines. He is supplied with tables and scientific data which will enable him to compute accurately the amount of coal you are wasting thru unprotected pipes; the cost of covering them, and the number of days before you get your money back. He will recommend 85% Magnesia—the standard pipe covering of the world, for its slightly greater initial cost is quickly absorbed in the saving it effects.

Catch the *big* thief now!

MAGNESIA ASSOCIATION OF AMERICA, 721 Bulletin Bldg., Phila., Penna.

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ALVIN M. FHRET, Ebbet Magnesia Mfg. Co.,
Valley Forge, Penna.

J. R. SWIFT
The Franklin Mfg. Co.,
Franklin, Penna.

R. V. MATTISON, Jr.,
Keasbey & Mattison Co.,
Ambler, Penna.



Ky., Pikeville.—Day and Night National Bank, capital \$250,000, will charter.

La., New Orleans.—Federal International Banking Co., capital \$7,000,000, organized with R. A. Hecht, Pres.; E. J. Caldwell, V.-P.; Haynes McFadden, Secy.

Md., Baltimore.—Old Reserve Sales Co., 618 Equitable Bldg., capital \$50,000, inceptd. with Harry Klaff, Myer Rosenbush, Henry L. Blum.

Md., Baltimore.—General Finance & Security, Inc., capital \$500,000, inceptd. with J. Wodall Greene, Keyser Bldg.; L. Ruth Ewell, Mary O. Garden.

Mo., Pine Lawn.—Pine Lawn Bank, 6149 Natural Bridge Rd., capital \$30,000 and \$3000 surplus, organized with J. B. Elliot, Pres.; L. B. Tiernon, V.-P.; H. L. Renkel, Secy.

N. C., Winston-Salem.—Security Building and Loan Assn., Masonic Temple Bldg., capital \$5,000,000, organized with Thomas Maslin, Pres.; G. Miller Hinshaw, V.-P.; J. S. Kuykendall, Secy.-Treas. (Supersedes recent item.)

Okl., Idabel.—Idabel National Bank, capital \$50,000, organized with R. D. Williams, Pres.; Bernie Herstein, Cashr.

Okl., Mangum.—Covington Bros.' Farm Loan & Investment Co., capital \$200,000, inceptd. with D. T. Covington, W. A. Covington, Mangum; W. P. Houck, Jester, Okla.

Okl., Morris.—Morris National Bank, capital \$25,000, will charter.

Okl., Tulsa.—American Investment & Building Co., capital \$100,000, inceptd. with Frank C. Thompson, H. W. Johnson, Willard John.

S. C., Columbia.—Equitable Trust Co., capital \$100,000, inceptd. with John P. Thomas, Jr., J. Waties Thomas, Morris C. Lumpkin.

S. C., Greenville.—Title Guarantee & Trust Co., organized with L. O. Patterson, Pres.-Treas.; J. W. Norwood, V.-P.; M. B. Prevost, Secy.

S. C., North.—First National Bank, capital \$50,000, organized with E. C. Johnson, Pres.; Benj. M. Badger, Jr., Cashr.

Tenn., Harriman.—Harriman National Bank, capital 50,000 and surplus \$5,000, chartered with Harry L. Durell, Albert F. Littleton, Charles B. Harvey; all Harriman; John A. East, Rockwood, Tenn.

Tex., Houston.—Blue Ridge State Bank organized with E. M. Robinson, Pres.; Augustine De Zavala, V.-P.; A. J. Adams.

Tex., Laredo.—Mexican-American Commercial Co., capital \$300,000, incept. with Domingo Gonzales, Antonio M. Brunzi, Emilio G. Lozano.

Tex., Miami.—First National Bank, capital \$25,000, will charter.

Va., Bristol.—Union Trust Bank, capital \$500,000, organized with S. H. Thompson, Pres.

Va., Norfolk.—United Savings Corp., capital \$50,000, chartered.

Va., Vinton.—First National Bank, capital \$50,000 organized with Geo. M. Muse, Pres.; F. L. Mitchell, Cashr.

W. Va., Amherstdale.—Edgewood Tailoring & Investment Co., capital \$10,000, inceptd. with J. S. Webb, H. D. Durham, Frank V. Davis.

New Securities.

Ark., De Witt—Levee.—Farely Lake Levee Dist., Arkansas and Jefferson counties, sold \$1,000,000 of 5½ per cent semi-annual \$1000 denomination bonds, dated Jan. 1, to Stifel-Nicholaus Investment Co., St. Louis, Mo.

Ala., Dothan.—Hydro-Electric and School.—City plans \$850,000 bonds including \$750,000 hydro-electric and \$100,000 school bonds. Address The Mayor.

Ala., Montgomery.—Water and Sewer.—City, C. B. Smith, Clk., sold \$200,000 of 6 per cent semi-annual \$1000 denomination 30-year bonds, dated Nov. 1, to Otto Marx & Co., Birmingham. (Lately noted inviting bids.)

Ark., Sheridan.—Road.—Grant County Road Improvement Dist. No. 9 sold \$78,000 of 6 per cent semi-annual \$500 denomination bonds, dated Sept. 1, to H. C. Speer & Sons Co., Chicago, Ill.

Ala., Tuscaloosa.—Bridge.—Tuscaloosa County Board of Revenue, Wm. W. Brandon, Pres., sold \$25,000 of 6 per cent semi-annual \$1000 denomination 21-year bridge refunding bonds, dated Jan. 1. (Lately noted inviting bids.)

D. C., Washington.—Treasury Certificates.—Treasury Dept., Secy. Houston will issue \$250,000 of 2 new series treasury certificates, dated Jan. 15, one maturing Apr. 15 and bearing 5½ per cent and other Oct. 15 and 5% per cent.

Fla., Dade City.—Road and Bridge.—Pasco County Comms. will invite bids until Feb. 7 on \$750,000 of Highlands Special Road and Bridge Dist.

Fla., Boynton.—Town, D. S. Hudson, Clk., will receive bids until Jan. 14 on \$10,000 of 7 per cent semi-annual \$1000 denomination bonds, dated Dec. 1.

Fla., Palm Beach.—Park.—City will vote Feb. 1 on \$80,000 bonds. Address The Mayor.

Fla., Pensacola.—Road.—Escambia County Comms. will sell road bonds.

Fla., Pensacola.—Dock, Belt Railroad.—City, F. D. Sanders, Mayor, rejected bids on \$400,000 of 4½ per cent bonds. (Previously noted inviting bids.)

Fla., Safety Harbor.—Street and Electric.—Town Comms. will vote on \$30,000 bonds including \$20,000 street and \$10,000 electric bonds.

Ga., Atlanta.—School Warrants.—State, Hugh M. Dorsey, Governor, will receive bids until Jan. 20 on \$3,500,000 school-fund warrants.

Ga., Brewton.—School.—Board of Education, L. P. Keon, Secy., will sell \$30,000 bonds.

Fla., West Palm Beach.—Drainage.—Palm Beach County Suprvs. will issue \$500,000 bonds annually for next 3 years.

Ga., Dudley.—School.—Board of Education, T. J. Gilbert, Secy., will sell \$15,000 bonds.

Ga., Fowlston.—School.—Fulton Consolidated School, H. W. Bussey, Secy., will invite bids on \$15,000 bonds.

Ga., Pearson.—Courthouse and Jail.—Atkinson County Comms. sold \$72,500 of 5 per cent semi-annual \$500 and \$1000 denomination bonds, dated Mch. 15, to J. H. Hilsman & Co., Atlanta.

La., Monroe.—School.—City, Mayor Bernstein, will vote on \$400,000 bonds.

La., Monroe.—Road.—Ouachita Parish Police Jury, W. A. O'Kelly, Clk., did not receive bids on \$1,600,000 road bonds Dist. No. 1.

La., Port Lavaca.—Seawall.—City Comsn. will receive bids until Feb. 7 on \$125,000 of 6 per cent semi-annual serial bonds, dated Nov. 10. Address D. E. Guidry, Mayor.

La., Shreveport.—Street, Sewer, Park, Jail, Fire-Station, etc.—City, L. F. Clawson, City Commr., will issue \$1,250,000 bonds including \$100,000 and \$50,000 street, \$100,000 storm sewer, \$250,000 park, \$265,000 library, \$200,000 jail, \$225,000 fire-station bonds; these bonds were voted in September. (Lately noted.)

Md., Baltimore.—Hospital and Road.—Board Public Works will receive bids until Feb. 3 on \$500,000 hospital and \$2,000,000 road bonds. (Previously noted.)

Md., Cumberland.—School.—Allegany County Board of Education sold \$350,000 of 5 per cent serial school bonds to Baker, Watts & Co., Nelson, Cook & Co., Townsend Scott &

Sons and Fidelity Trust Co., all of Baltimore, Md., on about 5.05 basis. (Lately noted inviting bids.)

Md., Rockville.—Road.—Montgomery County Comms. sold \$20,000 of bonds to Bank of Bethesda at par.

Miss., Forest.—Road.—Scott County Suprvs. B. R. Nichols, Clk., will receive bids until Feb. 7 on \$110,000 of 6 per cent semi-annual 25-year bonds of Suprvs.' Dist.

Miss., Grenada.—Road.—Grenada County Comms. sold \$300,000 bonds to Grenada Bank. These bonds were voted in May.

Miss., Greenwood.—Road and School.—Leflore County Suprvs., A. R. Bew, Clk., will receive bids until Feb. 8 (changed date from Jan. 4) on \$330,000 of 6 per cent semi-annual bonds including \$300,000 road and \$30,000 Sidon Consolidated School Dist. (Supersedes recent item.)

Miss., Jackson.—Electricity.—City, A. J. Johnson, City Clk., will vote Jan. 18 on \$1,000,000 bonds.

Miss., Meridian.—Ice Plant and Hospital.—City, W. H. White, City Clk., will receive bids until Jan. 17 on \$170,000 of 6 per cent 14½ and 10½-year bonds, including \$150,000 ice plant and \$20,000 hospital. (Supersedes recent item.)

Miss., Paulding.—Road.—Jasper County Suprvs. voted \$75,000 bonds.

Miss., Moss Point.—Street.—City, R. G. Borden, Mayor, sold street bonds to Mr. Gerkens, Contr.

Miss., Quitman.—Road.—Clarke County Suprvs., W. B. Raley, Clk., will receive bids until Feb. 8 on \$65,000 of 6 per cent No. 1 Road Dist. bonds.

Miss., Rolling Fork.—School.—Consolidated School Dist. will receive bids until Feb. 1 on \$125,000 of 6 per cent semi-annual bonds. Address Wm. Clements.

Mo., Bloomfield.—Road.—Liberty Central Trust Co., St. Louis, Mo., are offering to investors \$100,000 Stoddard County, Mo. Pike Township 5½ per cent semi-annual bonds, \$1000 denomination, dated Mar. 1.

Mo., Conway.—Road.—Laclede County, Conway Special Road Dist. No. 2, sold \$14,000 bonds to St. Louis firm.

Mo., Fulton.—Electric and Water.—City contemplates \$75,000 bond issue. Address The Mayor.

N. C., Blandenboro.—Municipal Improvement.—City sold \$10,000 of 6 per cent 20-year municipal improvement bonds. Address The Mayor.

N. C., Greenville.—Water, Light and Funding.—A. H. Taft, Treas., sold \$100,000 of 6 per cent semi-annual \$1000 denomination bonds, dated Dec. 1, including \$65,000 water and light and \$35,000 funding bonds. (Lately noted inviting bids.)

N. C., Hamlet.—School.—Town, E. H. Mahone, Clk., will receive bids until Apr. 15 on \$100,000 of 6 per cent semi-annual 1-20 year serial school bonds.

N. C., Hamlet.—School.—Town, J. C. Leigh, Mayor, will receive bids until Apr. 15 on \$100,000 of 6 per cent semi-annual serial, \$500 becoming due May 1, 1922, and \$5000 annually thereafter.

N. C., Newland.—Avery County Comms., A. W. Ray, Chrmn., will receive bids until Feb. 10 on \$150,000 of 6 per cent semi-annual \$1000 denomination 40-yr. bonds.

N. C., Raleigh.—School.—Wake County Board of Education, W. A. Withers, Chrmn., will receive bids until Feb. 7 on \$20,000 of 6 per cent semi-annual \$1000 denomination 20-year bonds of Cary High School Dist.

(Continued on page 138.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

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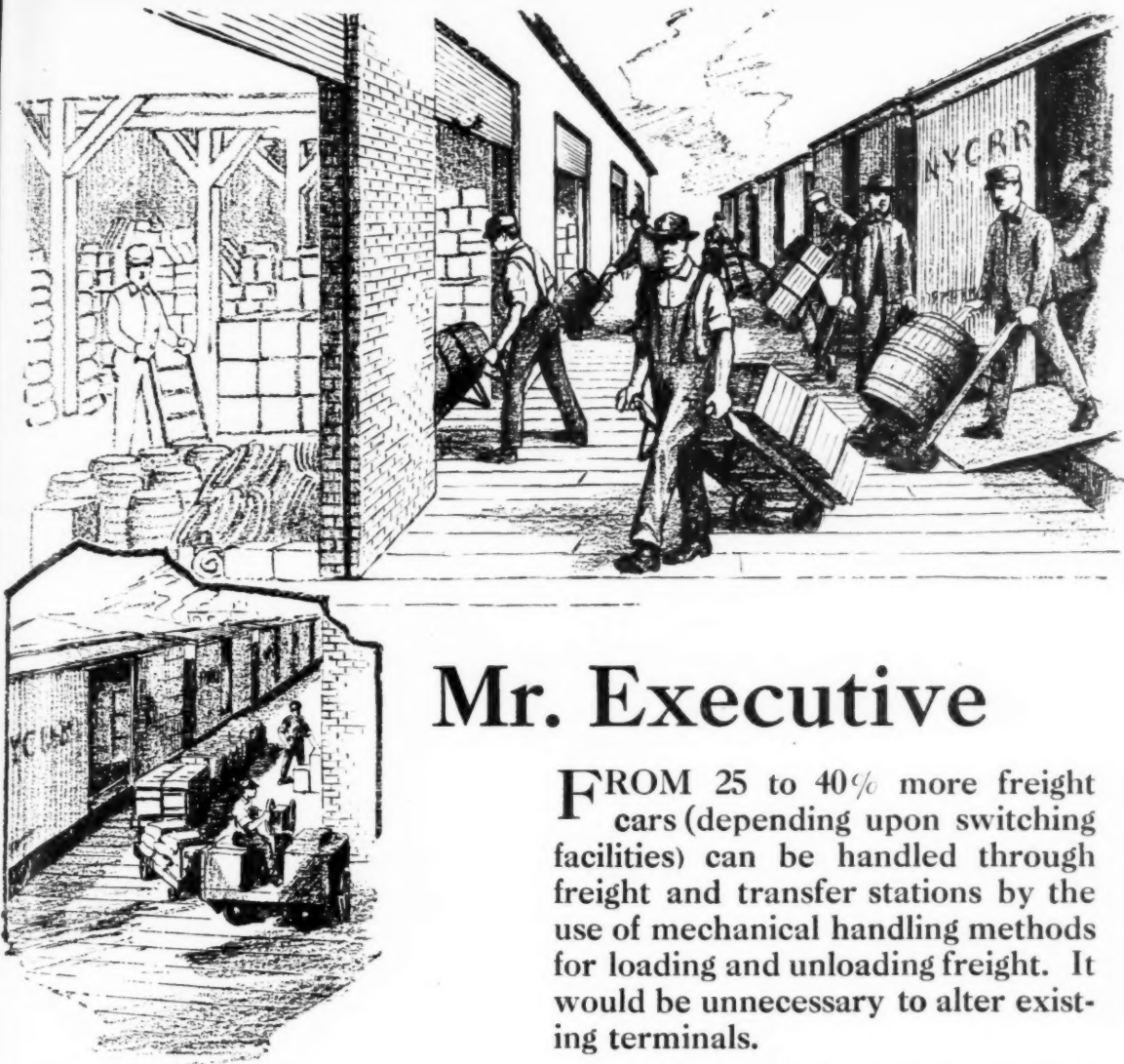
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Mr. Executive

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N. C., Morganton.—Town, W. R. Patton, Town Mgr., will receive bids until Feb. 7 on \$25,000 of \$500 denomination bonds.

N. C., Rocky Mount.—Gas.—City, T. T. Thorne, Mayor, will sell \$160,000 bonds; these bonds were voted last May.

N. C., Smithfield.—Courthouse and Jail.—Johnston County Comms., W. T. Adams, Clk., will receive bids until Feb. 17 on \$500,000 of 6 per cent semi-annual \$1000 denomination 30-year bonds, dated Jan. 1.

N. C., Sparta.—Road.—Alleghany County Comms., D. C. Duncan, Chrmn., will receive bids until Feb. 1 on \$40,000 of 6 per cent semi-annual \$1000 denomination bonds, dated Jan. 1.

N. C., Statesville.—Street.—Board of Alderman issued \$150,000 street bonds.

N. C., Tarboro.—Public Improvement and Refunding.—City, J. H. Jacobs, Clk., will receive bids until Jan. 25 on \$200,000 of 6 per cent 15½-year public-improvement and \$20,000 of 6 per cent 15½ refunding bonds; changed date from Dec. 25. (Lately noted inviting bids.)

N. C., Wilmington.—Road, Bridge and Ferry.—New Hanover County Comms., Thos. K. Woody, Clk., sold \$50,000 of 6 per cent \$1000 denomination 12½-year bonds, dated Jan. 1, to John Nuvera & Co., at \$50,000 and accrued interest. (Lately noted inviting bids.)

N. C., Wilson.—Street, Water and Sewer.—Town Comms., Theo. A. Hinnant, Clk., will receive bids until Jan. 24 on \$468,000 of 6 per cent semi-annual \$1000 denomination street bonds, dated Nov. 1, and \$64,000 of 6 per cent semi-annual \$1000 denomination sewer and water bonds, dated Nov. 1.

N. C., Yadkinville.—Road.—Yadkin County Comms., T. R. Eaton, Clk., will receive bids until Jan. 26 on \$90,000 of 6 per cent semi-annual \$1000 denomination 30-yr. bonds, dated Jan. 1. (Supersedes recent item.)

Okla., Tulsa.—School.—Board of Education will receive bids until Jan. 18 on \$300,000 bonds. These bonds were voted last year.

S. C., Anderson.—Funding.—City contemplates issuing \$200,000 funding bonds. Address The Mayor.

S. C., Charleston.—School.—Trustees Charleston County School, Dist. No. 4, sold \$25,000 of 6 per cent semi-annual \$1000 denomination bonds, dated Aug. 10, 1920, to Charleston Engineering & Contracting Co. at par and accrued interest.

S. C., Greenville.—School.—Board School Trustees, Geo. W. Sirrine, Secy., will receive bids until Jan. 25 on \$250,000 of 5 per cent semi-annual 19½-year bonds.

S. C., Spartanburg.—Street, Sewer and Park.—City, T. J. Boyd, Clk., rejected bids on \$200,000 of 5 per cent \$1000 denomination 20-year bonds.

Tenn., Alcoa.—Sewer.—City, A. B. Smith, Recorder, sold \$125,000 of 6 per cent semi-annual \$1000 denomination bonds, dated Jan. 1. (Lately noted inviting bids.)

Tenn., Cleveland.—Street.—City, L. L. Woolen, Mayor, will receive bids until Jan. 19 on \$50,000 of 6 per cent semi-annual paving bonds.

Tenn., Clinton.—Road.—Anderson County Comms. sold \$100,000 of 6 per cent semi-annual \$1000 denomination bonds, dated Oct. 4, to Harris Trust and Savings Bank and Caldwell & Co., jointly.

Tenn., Greenville.—(Road).—Greene County Comms. sold \$310,000 of 5½ per cent semi-annual \$1000 denomination bonds, dated May 1, to Harris Trust and Savings Bank and Caldwell & Co., jointly.

Tenn., Knoxville.—Funding.—City contemplates selling \$990,000 funding bonds; one authorizes issuance of \$500,000 of bonds, while other is for \$490,000; first will refund \$50,000 of municipal bonds previously issued by city and \$490,000 item is to retire bonds of Knoxville Water Co.

Tenn., Memphis.—City sold \$500,000 of 6 per cent revenue notes to Union and Planters Bank & Trust Co., Memphis, Tenn.; \$1000 denomination, dated Jan. 1.

Tenn., Nashville.—Memorial.—City Comsn. will receive bids on \$600,000 bonds.

Tenn., Nashville.—Memorial.—State Memorial Comsn., H.H. McAlester, State Treas., rejected bids on \$1,000,000 of 6 per cent \$500 denomination 40-year bonds. (Lately noted inviting bids.)

Tex., Ballinger.—Road.—Runnels County Comms. contemplate voting on bonds.

Tex., Gainesville.—Street.—City issued \$25,000 of 5½ per cent serial bonds. Address The Mayor.

Tex., Lockhart.—School.—Lockhart Independent School Dist. will sell \$200,000 bonds. (Previously noted voting.)

Tex., Port Lavaca.—Road.—Calhoun County Comms. issued \$100,000 of 5 per cent 30-year bonds.

Va., Portsmouth.—Street, School and Fire House.—City, L. G. White, Chrmn. Finance Comm. sold \$609,000 of 5 and 5½ per cent semi-annual 30-yr. bonds, dated Jan. 1; \$580,000 to A. B. Leach & Co., New York, and \$20,000 to Bank of Tidewater, Tidewater, Va. (Lately noted inviting bids.)

Va., Staunton.—Road.—Augusta County, J. N. McFarland, County Treas., sold \$50,000 of 6 per cent semi-annual \$1000, \$500 and \$100 denomination 30-year bonds, with 5-year option, dated Feb. 1, to Staunton National Bank at \$100.25 on ¼ of 1 per cent premium. These bonds are part of \$250,000 issue voted in June.

Financial Notes.

First National Bank, Crowley, La., increases capital from \$150,000 to \$250,000.

Yorkville Bank, Wheeling, W. Va., increases capital from \$25,000 to \$100,000.

Jemison & Co., Birmingham, Ala., increases capital from \$50,000 to \$300,000.

Bank of Fort Myers, Fla., increases capital from \$50,000 to \$100,000.

Bank of Nelson, Livingston, Tenn., increases capital from \$25,000 to \$50,000.

Bank of Mt. Airy, N. C., increases capital from \$50,000 to \$100,000.

Guaranty State Bank, Texola, Okla., increases capital from \$15,000 to \$20,000.

Bank of Bristol, Bristol, Va., increases capital from \$100,000 to \$200,000.

Davenport & Rich Investment Co., Memphis, Fla., increases capital to \$200,000.

First National Bank, Bristol, Va., increases capital to \$250,000.

Peoples Bank, Orangeburg, S. C., increases capital from \$100,000 to \$200,000.

National City Bank of Rome, Ga., increases capital from \$100,000 to \$200,000.

Dominion National Bank, Bristol, Va., increases capital from \$150,000 to \$300,000.

Union National Bank, Knoxville, Tenn., will increase capital from \$200,000 to \$400,000.

Louisville National Banking Co., Louisville, Ky., increases capital from \$250,000 to \$300,000.

First National Bank, Henderson, N. C., increases capital from \$100,000 to \$200,000.

Peoples Bank of Owenton, Ky., W. A. Lee, Pres., increases capital from \$25,000 to \$30,000.

Departmental Bank, Washington, D. C., 1714 Pennsylvania Ave., increases capital to \$500,000.

Mortgage Loan Co., Atlanta Trust Co. Bldg., Atlanta, Ga., increases capital from \$250,000 to \$500,000.

American Exchange National Bank, Greensboro, N. C., increases capital from \$400,000 to \$600,000.

First National Bank, H. E. Jones, Pres., Elizabethton, Tenn., increases capital to \$50,000 and surplus to \$18,000.

Dallas Building & Loan Assn., Dallas, Tex., increases capital from \$5,000,000 to \$10,000,000.

Gatesville National Bank, Gatesville, Tex., increases capital from \$50,000 to \$100,000. (Supersedes recent item.)

American State Bank, consolidation of Carolina Bank & Trust Co. and American State Bank, Gaffney, S. C., increases capital to \$200,000.

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